

| <i>E. coli</i> Protein ortholog | root | Score | Eubacteria -Proteobacteria | Score | Eukaryotae | Score | Function |
|------------------------------------|--------------|-------|-------------------------------|-------|------------|-------|----------|
| len | -Haemophilus | | | | | | |

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|---|---------|------|-----|-------------|--------|-------------|------|------------|-----|---|
| F | HIN0001 | cpdb | 657 | CN16_ECOLI | 2194 | - | - | 5NTD_BOVIN | 73 | 2',3'-cyclic-nucleotide phosphatase |
| J | HIN0002 | yhcl | 423 | ATU23794_1 | 187 | AMA_BACST | 130 | ATU23794_1 | 187 | hippuricase |
| S | HIN0003 | pepe | 279 | ECOUW67_156 | 107 | - | - | - | - | |
| S | HIN0004 | pepe | 145 | ECOUW67_156 | opt109 | - | - | - | - | |
| E | HIN0005 | pepe | 226 | PEPE_SALTY | 426 | - | - | - | - | peptidase E |
| E | HIN0006 | pepe | 411 | HYUC_PSESN | 264 | JN0885 | 260 | - | - | N-carbamyl-L-amino acid amid oxidoreductase |
| C | HIN0007 | pote | 139 | PHRRPOE_4 | 111 | - | - | - | - | putrescine-ornithine antiputrescine decarboxylase |
| E | HIN0008 | spef | 435 | POTE_ECOLI | 1756 | BSU31756_2 | 105 | A40775 | 72 | permease |
| E | HIN0009 | spef | 720 | DCOS_ECOLI | 2484 | DCOR_IACS3 | 1225 | - | - | ornithine decarboxylase |
| G | HIN0010 | argl | 509 | AQP1_HUMAN | 76 | MLU15181_20 | 72 | AQP1_HUMAN | 76 | permease |
| G | HIN0011 | argl | 310 | ARCC_PSEAB | 864 | TTTHPROB_1 | 60 | CADB_XENLA | 61 | carbamate kinase |
| E | HIN0012 | yigl | 334 | OWPSCA | 1453 | MYCOTC_1 | 319 | OTC_RANCA | 241 | ornithine carbamoyltransferase |
| R | HIN0013 | ybei | 272 | S30716 | 241 | YPDA_BACST | 103 | - | - | hydrolyase |
| R | HIN0014 | ybei | 160 | YBEI_ECOLI | 225 | - | - | - | - | integral membrane protein |
| S | HIN0015 | oraA | 108 | - | - | - | - | - | - | |
| L | HIN0016 | reca | 126 | RECX_ECOLI | 95 | - | - | - | - | regulator of RecA function |
| L | HIN0017 | reca | 354 | ECRECA_1 | 1358 | SVU04837_1 | 1117 | ATHRECA_1 | 605 | reca |
| S | HIN0018 | yjba | 217 | - | - | - | - | - | - | |
| R | HIN0019 | hemY | 129 | YJBA_ECOLI | 282 | - | - | - | - | membrane protein |
| H | HIN0020 | hemX | 428 | HEMY_ECOLI | 642 | - | - | - | - | uroporphyrinogen III cosynthase |
| H | HIN0021 | hemX | 332 | HEMX_ECOLI | 179 | - | - | - | - | uroporphyrinogen III methyltransferase |
| G | HIN0022 | cyaa | 843 | CYAA_PASMU | 891 | - | - | - | - | adenylate cyclase |
| C | HIN0023 | gpsA | 335 | GPDA_ECOLI | 1154 | S41948 | 65 | GPDA_CAEEL | 139 | glycerol 3-phosphate dehydrogenase |
| E | HIN0024 | cyse | 267 | CYSE_ECOLI | 998 | SYOSRA_4 | 380 | S52150 | 622 | serine acetyltransferase |
| C | HIN0025 | ydiB | 271 | YDIB_ECOLI | 137 | - | - | S46210 | 105 | shikimate 5-dehydrogenase |
| R | HIN0026 | fold | 461 | YNH1_CAEEL | 263 | MLU15181_20 | 123 | YNH1_CAEEL | 263 | cation transporter |
| H | HIN0027 | fucp | 282 | ECOADS_1 | 833 | S48595 | 257 | MTDC_MOUSE | 388 | 5,10-methylene-tetrahydrofolate reductase |
| G | HIN0028 | fucp | 428 | FUCP_ECOLI | 449 | BMR2_BACST | 62 | - | - | L-fucose permease |
| G | HIN0029 | fucp | 216 | FUCA_ECOLI | 742 | - | - | HTS_DROME | 92 | fucose-1-phosphate aldolase |
| G | HIN0030 | fucp | 144 | ECU29581_18 | 240 | RBSD_BACST | 76 | - | - | fucose transport protein |
| G | HIN0031 | fucp | 470 | FUCK_ECOLI | 387 | GNTK_BACST | 158 | JN0606 | 96 | fucokinase |
| G | HIN0032 | fucp | 604 | FUCI_ECOLI | 1331 | - | - | - | - | L-fucose isomerase |

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|---|---------|------|-----|-------------|------|-------------|------|-------------|-----|------------------------------|
| G | HIN0033 | fucr | 249 | FUCR_ECOLI | 286 | BACGNTZ_32 | 253 | RGBYH1 | 65 | L-fucose operon activator |
| L | HIN0034 | hepa | 923 | HEPA_ECOLI | 900 | GRPE_CIOAB | 69 | S39059 | 98 | helicase |
| J | HIN0035 | yabo | 219 | YABO_ECOLI | 723 | MGU02214_1 | 122 | S50972 | 104 | pseudou synthetase |
| G | HIN0036 | glpg | 192 | ECOW67_349 | 340 | - | - | - | 73 | glycerol metabolism protein |
| G | HIN0037 | glpr | 255 | GLPR_ECOLI | 451 | BACGNTZ_32 | 148 | RHOM_DROME | - | glycerol-3-phosphate regulon |
| M | HIN0038 | yaec | 273 | A43581 | 1287 | - | - | - | - | lipoprotein |
| R | HIN0039 | yaee | 198 | YAEF_ECOLI | 458 | BACORFA_2 | 136 | - | - | permease |
| F | HIN0040 | abc | 345 | ABC_ECOLI | 733 | GLNQ_BACST | 278 | MDL2_YEAST | 187 | transport ATPase |
| R | HIN0041 | yaed | 184 | YAE_D_ECOLI | 423 | S44958 | 80 | HIS7_PHYPR | 67 | hydrolase (phosphatase?) |
| J | HIN0042 | def | 169 | DEF_ECOLI | 549 | TTDEFMT_2 | 122 | - | - | N-formylmethionylaminoacyl- |
| J | HIN0043 | fnt | 318 | FMT_ECOLI | 841 | MSU10425_4 | 261 | FTDH_RAT | 198 | methionyl-tRNA formyltransf |
| J | HIN0044 | fmv | 451 | ECOW67_213 | 324 | S18529 | 69 | A48998 | 121 | rRNA methylase |
| P | HIN0045 | trka | 458 | TRKA_SALTY | 1596 | S26242 | 89 | TRKA_METMA | 228 | TRK system potassium uptake |
| N | HIN0046 | mscl | 128 | MSCL_ECOLI | 399 | CIOMSCL_1 | 193 | DHE2_ACHKL | 67 | large mechanosensitive condi |
| S | HIN0047 | ygfy | 85 | ECU28375_47 | 203 | - | - | - | - | - |
| L | HIN0048 | rpoE | 189 | RPOE_SALTY | 727 | MLU15180_30 | 114 | - | - | RNA polymerase sigma-E fact |
| L | HIN0049 | mcla | 195 | MCIA_ECOLI | 163 | - | - | - | - | negative regulator of rpoE |
| L | HIN0050 | coaA | 315 | PHRPOE_3 | 390 | - | - | - | - | sigma factor negative regul |
| H | HIN0051 | cofa | 311 | BVEGRS | 674 | S27735 | 66 | DEOK_HUMAN | 65 | pantothenate kinase |
| J | HIN0052 | tufa | 394 | EFFECT | 1904 | EFTU_BACFR | 1552 | EFLA_CANAL | 154 | translation elongation fact |
| S | HIN0053 | trpA | 98 | YADQ_ECOLI | 84 | - | - | - | - | - |
| R | HIN0054 | yjbn | 327 | YJBN_ECOLI | 606 | YACF_BACSU | 90 | S48817 | 103 | nifR3-like regulator? new A |
| P | HIN0055 | fepA | 953 | VIBHUTA_1 | 155 | - | - | - | - | transferrin-binding protein |
| S | HIN0056 | trpS | 96 | YIIS_ECOLI | 66 | - | - | - | - | - |
| J | HIN0057 | trpS | 334 | SYW_ECOLI | 1378 | SYW_BACST | 367 | SYWM_YEAST | 342 | tryptophanyl-tRNA synthetas |
| S | HIN0058 | ycfc | 205 | YCF_C_ECOLI | 317 | - | - | - | - | - |
| F | HIN0059 | purB | 456 | PUR8_ECOLI | 1871 | PUR8_BACSU | 94 | FUMH_HUMAN | 98 | adenylosuccinate lyase |
| J | HIN0060 | rpLJ | 163 | R5EB10 | 497 | RL10_BACSU | 238 | ATU20183_1 | 60 | ribosomal protein L10 |
| J | HIN0061 | rpL | 123 | RLA_HALEU | 370 | RLA_HALEU | 370 | RLA4_SCHPO | 84 | ribosomal protein L7/L12 |
| M | HIN0062 | glmu | 456 | GLMU_ECOLI | 1669 | L1STMS_1 | 356 | ATU22964_1 | 80 | UDP-n-acetylglucosamine pyr |
| C | HIN0063 | bisc | 825 | TORA_ECOLI | 929 | YYAE_BACSU | 105 | FDHA_METFO | 105 | biotin sulfoxide reductase |
| C | HIN0064 | torC | 368 | TORC_ECOLI | 218 | - | - | - | - | cytochrome C |
| I | HIN0065 | pldB | 313 | PSECL2 | 135 | S52201 | 72 | CELK02F3_2 | 55 | lysophospholipase |
| C | HIN0066 | asd | 371 | DHAS_ECOLI | 704 | DHAS_MYCSM | 94 | - | - | aspartate-semialdehyde dehy |
| P | HIN0067 | yhid | 238 | SSU20224_2 | 99 | SSU20224_2 | 99 | - | - | Mg2+-transporting ATPase |
| R | HIN0068 | mdab | 208 | MDAB_ECOLI | 633 | - | - | SPAC5H10_5 | 588 | modulator of drug activity |
| L | HIN0069 | rep | 670 | REP_ECOLI | 1657 | S27667 | 571 | HJBYDH | 140 | DNA helicase |
| S | HIN0070 | rep | 70 | YEJM_ECOLI | 60 | - | - | - | - | - |
| M | HIN0071 | kdtB | 156 | KDTB_ECOLI | 441 | SYOFIL_2 | 349 | - | - | lipopolysaccharide core bio |
| M | HIN0072 | kdtA | 427 | KDTA_ECOLI | 914 | S28562 | 151 | VAT1_TORCA | 55 | 3-deoxy-d-manno-octulosonic |
| M | HIN0073 | tag | 254 | YCOA_SYNP7 | 173 | YCOA_SYNP7 | 173 | BAGT_MOUSE | 62 | glycosyl transferase |
| L | HIN0074 | tag | 185 | 3MGI_ECOLI | 624 | MLU15180_16 | 225 | - | - | DNA-3-methyladenine glycosi |
| E | HIN0075 | aroE | 272 | AROE_ECOLI | 535 | SPU11948_1 | 60 | AROI_YEAST | 90 | shikimate 5-dehydrogenase |
| R | HIN0076 | yrdC | 183 | ECOW67_206 | 507 | YMLC_BACSU | 127 | SUA5_YEAST | 84 | putative transcriptional reg |
| R | HIN0077 | yrdd | 178 | ECOW67_207 | 308 | TOP1_BACSU | 129 | ZG58_XENLA | 51 | Zn finger (DNA-binding ?) p |
| R | HIN0078 | yhes | 638 | ECOW67_276 | 1256 | TLRC_STRFR | 228 | CELP42A10_5 | 474 | transport ATPase |
| R | HIN0079 | - | 98 | A41879 | 93 | A47082 | 71 | HSTAF1128_1 | 58 | transcription regulator |
| S | HIN0080 | - | 119 | HIU32746 | 263 | - | - | - | - | - |

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|---|---------|------|-------------|-------|------------|-----|------------|------------------------------|
| P | HIN0081 | 993 | S49087 | 198 | - | - | - | transferin-binding protein |
| R | HIN0082 | 581 | CEDH1_3 | 354 | SGDASTRS_4 | 280 | CEDH1_3 | transport ATPase |
| R | HIN0083 | 552 | HMT1_SCHPO | 422 | HETA_ANASP | 396 | HMT1_SCHPO | transport ATPase |
| R | HIN0084 | 343 | HIP1_ECOLI | 75 | - | - | - | hipA protein, detected in |
| G | HIN0085 | 333 | KPNGLPX_1 | 1190 | YMWI_BACSU | 593 | - | glycerol metabolism (?) new |
| R | HIN0086 | 72 | YTIU_ECOLI | 156 | A43528 | 81 | MYS3_HYDAT | myosin-like protein (coiled |
| R | HIN0087 | 146 | MIOC_ECOLI | 398 | CPXB_BACME | 63 | JN0458 | flavodoxin-related protein |
| S | HIN0088 | 144 | YIHZ_ECOLI | 403 | S39974 | 335 | - | new BCR |
| S | HIN0089 | 158 | YGBB_ECOLI | 627 | YACN_BACSU | 502 | - | new BCR |
| M | HIN0090 | 225 | ECU29579_44 | 278 | YACM_BACSU | 139 | - | nucleotidyltransferase |
| S | HIN0091 | 92 | ECU29579_45 | 193 | - | - | - | |
| F | HIN0092 | 155 | XGPT_SALTY | 318 | HPRT_LACLA | 62 | XPA_HUMAN | xanthine-guanine phosphorib |
| E | HIN0093 | 484 | JU0300 | 742 | - | - | - | X-His peptidase |
| L | HIN0094 | 295 | C37841 | 889 | CODV_BACSU | 230 | - | integrase-recombinase |
| S | HIN0095 | 146 | PSALMX | 165 | - | - | - | |
| C | HIN0096 | 263 | TPIS_ECOLI | 795 | TMOA_1 | 353 | TPIS_RABIT | triosephosphate isomerase |
| G | HIN0097 | 105 | BVEGGE | 215 | - | - | DINI_RAPSA | sulfatase or Tyr phosphatase |
| R | HIN0098 | 298 | RARD_ECOLI | 164 | YXXF_BACSU | 65 | - | membrane protein |
| E | HIN0099 | 292 | ILVY_ECOLI | 637 | M28509_1 | 223 | S77495_1 | transcription activator |
| E | HIN0100 | 492 | ISECKR | 1898 | A47037 | 162 | S16351 | ketol-acid reductoisomerase |
| C | HIN0101 | 426 | GLPC_ECOLI | 742 | FER_PEPAS | 70 | SCGUT2A_1 | anaerobic glycerol-3-phosph |
| C | HIN0102 | 432 | GLPB_ECOLI | 288 | DNRF_STRPE | 75 | GPDN_RAT | anaerobic glycerol-3-phosph |
| C | HIN0103 | 563 | DEECNA | 1959 | U00022_1 | 135 | MMNPT1CT_1 | glycerol-3-phosphate permea |
| C | HIN0104 | 480 | GLPT_ECOLI | 448 | GLPT_BACSU | 400 | NABA_RAT | permease |
| R | HIN0105 | 304 | ECOMERTET_6 | 68 | YYAM_BACSU | 64 | CEK02C4_1 | glycerophosphoryl diester p |
| C | HIN0106 | 364 | GLPQ_ECOLI | 1024 | GLPF_BACSU | 161 | RATAQP_1 | glycerol uptake facilitator |
| C | HIN0107 | 264 | GLPF_SHIFL | 1035 | GLPK_BACSU | 169 | S46937 | glycerol kinase |
| G | HIN0108 | 503 | KIEGGL | 2111 | HPRT_LACLA | 62 | XPA_HUMAN | xanthine-guanine phosphori |
| F | HIN0109 | 155 | XGPT_SALTY | 318 | - | - | S37645_1 | lipoprotein, acid phosphata |
| R | HIN0110 | 274 | S37645_1 | 82 | YPUL_BACSU | 184 | LDU02459_1 | pseudu synthetase |
| J | HIN0111 | 240 | YPUL_BACSU | 184 | U00018_30 | 69 | RTG2_YEAST | exopolysphosphate |
| F | HIN0112 | 323 | A45333 | 916 | - | - | - | coiled coil domain-containi |
| M | HIN0113 | 1298 | YTFQ_ECOLI | 387 | - | - | - | peptidyl-prolyl cis-trans i |
| S | HIN0114 | 578 | YTFM_ECOLI | 824 | - | - | - | |
| O | HIN0115 | 190 | SLYD_ECOLI | 638 | S46228 | 79 | CELZC395_8 | peptidyl-prolyl cis-trans i |
| S | HIN0116 | 153 | YJGD_SALTY | 361 | - | - | - | |
| S | HIN0117 | 339 | ECU29579_42 | 583 | - | - | - | |
| R | HIN0118 | 249 | ECU29579_41 | 523 | - | - | - | |
| R | HIN0119 | 192 | YLB2_HAESO | 806 | S39339 | 63 | YBU4_YEAST | acid phosphatase (?) |
| S | HIN0120 | 61 | ECOUW67_198 | opt52 | - | - | - | lipoprotein, alkaline phospi |
| I | HIN0121 | 405 | NLPD_ECOLI | 488 | XLVA_BACSU | 93 | - | lipoprotein |
| L | HIN0122 | 861 | MUTS_AZOVI | 2178 | HEXA_STRPN | 537 | MSH2_HUMAN | DNA repair protein, ATPase |
| J | HIN0123 | 461 | S47812 | 1148 | - | - | - | cysteinyI-tRNA (Ser) seleni |
| J | HIN0124 | 619 | S47811 | 312 | EFTI_STRRA | 184 | EFLA_YEAST | translation elongation fact |
| S | HIN0125 | 98 | RELB_ECOLI | 75 | - | - | - | negative regulator of trans |
| S | HIN0126 | 102 | RJ2PRP | 99 | - | - | - | |
| P | HIN0127 | 1084 | S14548 | 173 | JLU07025_1 | 100 | S14548 | transferin-binding protein |
| O | HIN0128 | 432 | TIG_ECOLI | 1449 | MGU01772_1 | 79 | YSCL9324_6 | peptidyl-prolyl cis-trans i |

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|---|---------|------|------|-------------|------|-------------|-----|-------------|-----|-----------------------------|
| O | HIN0129 | clpP | 193 | CLPP_ECOLI | 744 | SSU16135_1 | 618 | HSCLPMR_1 | 580 | ATP-dependent Clp protease |
| O | HIN0130 | clpX | 411 | A48709 | 1340 | HSU1_BACSU | 142 | YB77_YEAST | 287 | ATP-dependent protease ATPa |
| N | HIN0131 | sece | 106 | SECE_ECOLI | 210 | SECE_THEMEA | 91 | - | - | preprotein translocase subu |
| L | HIN0132 | nusG | 185 | NUSG_ECOLI | 692 | NUSG_BACSU | 372 | R24P_SULSO | 54 | transcription antiterminato |
| R | HIN0133 | 250 | 250 | VACJ_SHITL | 279 | - | - | - | - | intercellular spread of Shl |
| S | HIN0134 | yjgF | 130 | ECOW93_156 | 394 | YABJ_BACSU | 227 | YE07_YEAST | 171 | new ACR |
| O | HIN0135 | htpX | 283 | HTPX_ECOLI | 636 | STAMECRA_1 | 66 | HSPPODOMB_1 | 59 | putative metalloprotease |
| R | HIN0136 | yhhp | 93 | YHHP_ECOLI | 250 | - | 175 | - | - | putative transcription regu |
| S | HIN0137 | yigZ | 206 | YIGZ_ECOLI | 533 | YVYE_BACSU | 68 | SCMGTP4A_1 | 50 | new BCR |
| P | HIN0138 | trkH | 423 | TRKH_ECOLI | 887 | ENENTP_11 | - | - | - | TRK system potassium uptake |
| S | HIN0139 | yihI | 186 | YIHI_SALTY | 155 | - | - | - | - | - |
| S | HIN0140 | 146 | 146 | - | - | - | - | - | - | - |
| P | HIN0141 | narp | 208 | ECOHU49_15 | 398 | BACDEGSU_2 | 258 | - | - | nitrate/nitrite response re |
| E | HIN0142 | lysA | 415 | DCDA_PSEAE | 848 | DCDA_BACSU | 231 | DCOR_CAEEL | 114 | diaminopimelate decarboxyla |
| L | HIN0143 | recQ | 649 | EVECRQ | 1629 | YXIN_BACSU | 153 | HUMDHQ1_1 | 302 | DNA helicase |
| J | HIN0144 | pros | 572 | SYP_ECOLI | 1068 | SYP_CHLTR | 336 | YER7_YEAST | 302 | prolyl-tRNA synthetase |
| E | HIN0145 | osta | 782 | YABG_ECOLI | 329 | ENP1_BACSH | 73 | - | - | endopeptidase(?) |
| R | HIN0146 | 127 | 127 | ECU28377_11 | 197 | - | - | - | - | periplasmic protein |
| S | HIN0147 | 50 | 50 | - | - | - | - | - | - | - |
| C | HIN0148 | sufl | 311 | ECU28377_11 | 434 | SAPHA_1 | 100 | B48521 | 152 | periplasmic protein, oxidor |
| I | HIN0149 | plsc | 240 | PLSC_ECOLI | 790 | BORPLSCTOP_ | 107 | PLSC_YEAST | 157 | 1-acyl-sn-glycerol-3-phosph |
| R | HIN0150 | ybbF | 237 | YBBF_ECOLI | 122 | - | - | - | - | metalloprotease ? |
| E | HIN0151 | ilvG | 508 | NTG2_MOUSE | 298 | YWBA_BACSU | 58 | NTG2_MOUSE | 298 | sodium-dependent amino acid |
| E | HIN0152 | ilvG | 265 | J00875 | 538 | STMILVBCN_2 | 320 | ILVB_PORUM | 295 | acetolactate synthase II |
| E | HIN0153 | ilvD | 612 | DWECDA | 2403 | ILVD_CLOFA | 377 | SCXCOSM83_2 | 331 | dihydroxy-acid dehydratase |
| E | HIN0154 | ilvA | 513 | THD1_ECOLI | 1417 | THD1_BACSU | 265 | THD1_LYCES | 851 | threonine dehydratase |
| L | HIN0155 | dnaE | 1159 | VCU30472_2 | 3975 | MC129_1 | 267 | - | - | DNA polymerase III alpha su |
| G | HIN0156 | 485 | 485 | U00022_9 | 249 | U00022_9 | 249 | SC8021X_4 | 186 | phosphoglucumutase |
| S | HIN0157 | ytfH | 62 | YTFH_ECOLI | 105 | YYBR_BACSU | 93 | - | - | new BCR |
| S | HIN0158 | ytfG | 109 | YTFG_ECOLI | 130 | - | - | - | - | - |
| N | HIN0159 | secB | 169 | SECB_ECOLI | 295 | - | - | - | - | - |
| R | HIN0160 | yibN | 148 | YIBN_ECOLI | 371 | MPINIRDHOM_ | 61 | HS6B_DROME | 47 | protein-export protein |
| E | HIN0161 | ansB | 349 | U06943_1 | 1200 | ASPG_BACLI | 231 | ASG2_YEAST | 311 | tyrosine phosphatase or sul |
| E | HIN0162 | 440 | 440 | DCUB_ECOLI | 469 | - | - | - | - | 1-asparaginase II |
| C | HIN0163 | ndh | 444 | DEECR | 759 | NASD_BACSU | 78 | YMAD_YEAST | 78 | c4-dicarboxylate permease |
| I | HIN0164 | plsb | 810 | PLSB_ECOLI | 1667 | - | 186 | A41672 | 139 | NADH dehydrogenase |
| L | HIN0165 | lexA | 209 | LEXA_PSEPU | 604 | U00019_5 | 181 | - | - | glycerol-3-phosphate acyltr |
| E | HIN0166 | dapF | 274 | DAPF_ECOLI | 1152 | S52295 | 292 | - | - | SOS regulatory protein (rep |
| O | HIN0167 | 165 | 165 | TAGD_VIBCH | 376 | B43583 | 174 | SP22_BOVIN | 68 | diaminopimelate epimerase |
| F | HIN0168 | purL | 1320 | PURL_ECOLI | 2438 | MLU15182_5 | 174 | PUR4_YEAST | 618 | thiol antioxidant enzyme |
| S | HIN0169 | 382 | 382 | YPCP_YEREN | 477 | - | - | - | - | phosphoribosylformylglycina |
| G | HIN0170 | 303 | 303 | S49339 | 109 | BSU21932_1 | 76 | S49339 | 109 | L-glutamine-D-fructose-6-ph |
| S | HIN0171 | yibQ | 280 | YIBQ_ECOLI | 410 | - | 120 | - | - | - |
| R | HIN0172 | yibP | 410 | YIBP_ECOLI | 413 | SYOCPCB_10 | 590 | DDU07817_1 | 137 | myosin-like protein |
| C | HIN0173 | gpmA | 227 | PMG1_ECOLI | 652 | S30886 | 129 | PMBYX | 617 | phosphoglycerate mutase 1 |
| J | HIN0174 | xpmE | 70 | RL31_ECOLI | 288 | MLU15186_19 | 101 | - | - | 50S ribosomal protein L31 |
| L | HIN0175 | mutY | 378 | MUTY_ECOLI | 976 | END3_BACSU | - | - | - | A/G-specific adenine glyco |
| S | HIN0176 | yggX | 90 | ECU28377_60 | 387 | - | - | - | - | - |

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|---|---------|------|-----|-------------|------|------------|-----------|-----|-------------------------------|
| M | HIN0177 | YggZ | 357 | ECU28377_62 | 581 | - | LYG_ANSAN | 47 | lytic transglycosylase |
| S | HIN0178 | nadr | 226 | - | 837 | MYCPTSICRR | - | 60 | transcriptional regulator (|
| H | HIN0179 | ribB | 421 | NADR_SALTY | 731 | GCH2_BACSU | 77 | 228 | 3,4-dihydroxy-2-butanone 4-ol |
| H | HIN0180 | ribB | 215 | RIBB_ECOLI | 200 | - | 307 | 60 | glycosyl transferase |
| R | HIN0181 | yibK | 282 | PHU15958_2 | 643 | BCAPPSAT_3 | 277 | 228 | rRNA methylase (SpoV family |
| J | HIN0182 | yihf | 160 | YIBK_ECOLI | 307 | MTU00024_4 | 98 | 76 | new ACR |
| S | HIN0183 | ftsY | 193 | YHMF_ECOLI | 866 | SR54_BACSU | 183 | 242 | cell division, signal recog |
| M | HIN0184 | ftsE | 414 | FTSY_ECOLI | 665 | GLN0_BACST | 224 | 96 | transport ATPase |
| M | HIN0185 | ftsX | 218 | FTSE_ECOLI | 699 | - | - | 708 | cell division, membrane pro |
| M | HIN0186 | ftsX | 310 | FTSX_ECOLI | 872 | JC4032 | 846 | 708 | acetyl coenzyme A acetyltra |
| I | HIN0187 | ygeF | 393 | S29276 | 1051 | - | - | 217 | integral membrane protein |
| I | HIN0188 | atoE | 447 | atoE | 426 | PCAJ_BACSU | 426 | 283 | 3-oxoacyl CoA-transferase |
| I | HIN0189 | atoA | 223 | PCAJ_BACSU | 611 | CTFA_CLOAB | 611 | 217 | transcription regulator |
| I | HIN0190 | atoD | 217 | CTFA_CLOAB | 143 | YMBI_BACSU | 134 | 80 | 3-oxoadipate CoA-transferase |
| E | HIN0191 | rpst | 315 | CYSB_ECOLI | 504 | S37489 | 337 | 132 | transcription regulator |
| J | HIN0192 | rp1C | 118 | RS10_ECOLI | 551 | RL3_MYCCA | 288 | 86 | 30S ribosomal protein S10 |
| J | HIN0193 | rp1D | 208 | RL3_YERPS | 864 | RL4_BACST | 330 | 117 | 50S ribosomal protein L3 |
| J | HIN0194 | rp1M | 200 | RL4_YERPS | 354 | RL23_MYCCA | 148 | 222 | 50S ribosomal protein L4 |
| J | HIN0195 | rp1B | 99 | R5EC23 | 1298 | BACRPL1_4 | 767 | 119 | 50S ribosomal protein L23 |
| J | HIN0196 | rp1B | 273 | RL2_YERPS | 447 | R3BS19 | 332 | 73 | ribosomal protein L2 |
| J | HIN0197 | rpss | 91 | R3EC19 | 503 | RL22_BACSU | 295 | 106 | ribosomal protein S19 |
| J | HIN0198 | rp1V | 110 | RL22_ECOLI | 1019 | S10613 | 593 | 71 | 50S ribosomal protein L22 |
| J | HIN0199 | rp3C | 235 | R3EC3 | 632 | RL16_BACSU | 359 | 106 | 50S ribosomal protein S3 |
| J | HIN0200 | rp1P | 136 | RL16_ECOLI | 234 | RL29_BACST | 136 | 67 | 50S ribosomal protein L16 |
| J | HIN0201 | rp3C | 63 | JC2274 | 379 | RS17_THEMA | 248 | 84 | 50S ribosomal protein L29 |
| J | HIN0202 | rp3Q | 85 | R3EC17 | 593 | RL14_THETH | 331 | 81 | ribosomal protein S17 |
| S | HIN0203 | rp1N | 201 | - | 403 | RL24_BACST | 170 | 68 | 50S ribosomal protein L14 |
| J | HIN0204 | rp1X | 123 | RL14_ECOLI | 845 | RL5_BACST | 607 | 125 | 50S ribosomal protein L24 |
| J | HIN0205 | rp1E | 103 | ECOUW67_233 | 473 | R3BS14 | 289 | 111 | 50S ribosomal protein L5 |
| J | HIN0206 | rp1E | 179 | ECOUW67_232 | 562 | BACRGB_1 | 441 | 67 | 30S ribosomal protein S14 |
| J | HIN0207 | rp3N | 101 | ECOUW67_231 | 768 | RS5_BACST | 454 | 107 | 30S ribosomal protein S8 |
| J | HIN0208 | rp3H | 130 | ECOUW67_230 | 242 | RL30_BACST | 139 | 63 | 30S ribosomal protein L6 |
| J | HIN0209 | rp1F | 177 | JC2281 | 602 | RL15_MYCCA | 312 | 82 | 50S ribosomal protein L18 |
| J | HIN0210 | rp1R | 117 | RL18_ECOLI | 1181 | SECY_SYMP7 | 343 | 64 | 50S ribosomal protein L15 |
| J | HIN0211 | rp3E | 166 | ECOUW67_227 | 146 | RL36_CHLTR | 142 | 81 | preprotein translocase subu |
| J | HIN0212 | rp3E | 59 | JC2284 | 487 | R3BS13 | 365 | 103 | 50S ribosomal protein L36 |
| J | HIN0213 | rp3E | 144 | RL15_ECOLI | 629 | RS11_BACSU | 433 | 95 | ribosomal protein S13 |
| N | HIN0214 | secY | 441 | SECY_ECOLI | 487 | RS11_BACSU | 433 | 95 | ribosomal protein S11 |
| J | HIN0215 | rp3M | 37 | RL36_ORYSA | 487 | A37146 | 312 | 215 | ribosomal protein S4 |
| J | HIN0216 | rp3M | 122 | R3EC13 | 487 | A37146 | 312 | 215 | DNA-directed RNA polymerase |
| J | HIN0217 | rp3M | 129 | R3EC11 | 487 | A37146 | 312 | 215 | 50S ribosomal protein L17 |
| J | HIN0218 | rp3D | 206 | R3EC4 | 487 | A37146 | 312 | 215 | transcription regulator (cal |
| J | HIN0219 | rp3A | 328 | RPOA_ECOLI | 795 | RPOA_BACSU | 400 | 215 | arylsulfatase regulatory pr |
| J | HIN0220 | rp1Q | 128 | RL17_ECOLI | 570 | F32307 | 135 | 137 | permease |
| G | HIN0221 | as1B | 129 | PDUI7435_1 | 90 | NTCA_ANASP | 82 | 70 | ATP-binding protein |
| R | HIN0222 | as1B | 241 | CHUR_BACTN | 294 | CHUR_BACTN | 294 | - | - |
| R | HIN0223 | yaem | 268 | HIT32772_5 | 80 | - | - | - | - |
| R | HIN0224 | yaem | 397 | yaem | 143 | - | - | - | - |

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|---|---------|-------|-----|------------|------|-------------|-----|-------------|-----|--|
| J | HIN0225 | frt | 185 | RRF_ECOLI | 655 | STRDNAORF_1 | 62 | NLP_DAUCA | 365 | ribosome releasing factor |
| G | HIN0226 | pckA | 538 | ECOW67_327 | 1948 | STADEPCK_1 | 644 | U09241_1 | 737 | phosphoenolpyruvate carboxyl new BCR |
| S | HIN0227 | yrftI | 293 | ECOW67_325 | 776 | YACC_BACSU | 81 | - | 802 | argininosuccinate lyase |
| E | HIN0228 | argH | 457 | ARYL_ECOLI | 1730 | SCARFGH_2 | 93 | S32580 | 102 | glucosephosphate uridylyltransferase |
| F | HIN0229 | galU | 295 | KPNCP3_3 | 809 | GTA_BACSU | 281 | E2BE_YEAST | 102 | carbon storage regulator |
| G | HIN0230 | csrA | 63 | ERWMSMA_1 | 221 | CSRA_BACSU | 160 | - | 231 | alanyl-tRNA synthetase |
| J | HIN0231 | alas | 874 | SYA_ECOLI | 3198 | MC047_1 | 262 | SYAC_YEAST | 266 | universal stress protein |
| R | HIN0232 | uspa | 141 | S47715 | 513 | YXIE_BACSU | 78 | - | 266 | X-Pro aminopeptidase |
| E | HIN0233 | pepP | 430 | DPECP | 950 | JN0491 | 200 | PEPD_HUMAN | 120 | aldose 1-epimerase precursor |
| S | HIN0234 | ygfb | 182 | YGFB_ECOLI | 257 | - | 105 | HSU11036_1 | 105 | galactokinase |
| G | HIN0235 | galM | 340 | GALM_ECOLI | 220 | MURO_LACHE | 232 | GA12_HUMAN | 891 | galactose-1-phosphate uridylyltransferase |
| G | HIN0236 | galK | 397 | KIECGG | 448 | GAL1_LACHE | 191 | A44473 | 136 | galactose operon repressor |
| G | HIN0237 | galT | 349 | XNECUD | 1362 | GAL7_STRLI | 283 | - | 61 | D-galactose-binding periplasmic galactoside permease |
| G | HIN0238 | galS | 332 | ECOH47_42 | 932 | CCPA_BACSU | 106 | - | 61 | membrane protein |
| G | HIN0239 | mgIB | 349 | DGAL_CITFR | 897 | TP38_TREPA | 380 | ABC2_MOUSE | 61 | integral membrane protein |
| G | HIN0240 | mgIA | 506 | MGLA_ECOLI | 1920 | RBSA_BACSU | 321 | DROOPSB5_1 | 136 | galactoside permease |
| G | HIN0241 | mgIC | 336 | MGLC_ECOLI | 1389 | RBSC_BACSU | 61 | CEM01F1_5 | 136 | galactoside permease |
| R | HIN0242 | - | 244 | CEM01F1_5 | 61 | - | - | - | 61 | membrane protein |
| R | HIN0243 | yciB | 185 | ECU24203_3 | 442 | - | - | - | 61 | integral membrane protein |
| S | HIN0244 | yciA | 154 | YCIA_ECOLI | 477 | - | - | - | 61 | integral membrane protein |
| S | HIN0245 | yciI | 98 | YCII_ECOLI | 330 | - | - | - | 61 | integral membrane protein |
| M | HIN0246 | slt | 593 | SLT_ECOLI | 259 | - | - | - | 61 | integral membrane protein |
| E | HIN0247 | trpR | 101 | TRPR_ENTAE | 183 | - | - | - | 61 | integral membrane protein |
| M | HIN0248 | yrbM | 194 | ECOW67_137 | 584 | PBPF_BACSU | 289 | - | 61 | integral membrane protein |
| C | HIN0249 | frdD | 114 | FRDD_ECOLI | 224 | - | - | - | 61 | integral membrane protein |
| C | HIN0250 | frdC | 132 | FRDC_PROVU | 196 | PHAG_FREDI | 52 | - | 61 | integral membrane protein |
| C | HIN0251 | frdB | 256 | RDECS | 521 | U00022_19 | 207 | MTCCGNS_2 | 153 | soluble lytic murein transglycosylase |
| C | HIN0252 | frdA | 599 | FRDA_PROVU | 1429 | U00022_18 | 262 | A42792 | 300 | tryptophan repressor |
| J | HIN0253 | yjeA | 333 | ECOW93_70 | 600 | SYK_BACSU | 215 | SYKC_YEAST | 175 | penicillin-binding protein |
| G | HIN0254 | cpxR | 227 | CPXR_ECOLI | 404 | YCBL_BACSU | 227 | - | 175 | penicillin-binding protein |
| S | HIN0255 | smgA | 189 | SMPA_ECOLI | 98 | - | - | - | 175 | penicillin-binding protein |
| S | HIN0256 | yejK | 341 | YEJK_ECOLI | 833 | - | - | - | 175 | penicillin-binding protein |
| S | HIN0257 | yejL | 72 | YEJL_ECOLI | 172 | - | - | - | 175 | penicillin-binding protein |
| R | HIN0258 | yejM | 585 | YEJM_ECOLI | 621 | - | - | - | 175 | penicillin-binding protein |
| F | HIN0259 | coda | 276 | CODA_ECOLI | 91 | - | - | - | 175 | penicillin-binding protein |
| S | HIN0260 | - | 45 | - | - | - | - | - | 175 | penicillin-binding protein |
| H | HIN0261 | mob | 192 | MOB_ECOLI | 267 | - | - | - | 175 | penicillin-binding protein |
| S | HIN0262 | yihD | 88 | YIHD_ECOLI | 301 | - | - | - | 175 | penicillin-binding protein |
| O | HIN0263 | dsbA | 205 | ECSBA_1 | 288 | LPUI5278_1 | 58 | CHKP4HB02_1 | 54 | thiol:disulfide isomerase |
| S | HIN0264 | yifE | 111 | YIFE_ECOLI | 327 | - | - | - | 54 | thiol:disulfide isomerase |
| J | HIN0265 | trmA | 363 | TRMA_ECOLI | 1240 | S41759 | 67 | RNC1_YEAST | 102 | tRNA (uracil-5-)-methyltransferase |
| S | HIN0266 | yhiQ | 257 | S47717 | 726 | - | - | - | 102 | tRNA (uracil-5-)-methyltransferase |
| C | HIN0267 | - | 144 | - | 119 | - | - | - | 102 | tRNA (uracil-5-)-methyltransferase |
| R | HIN0268 | yihC | 178 | YIHC_ECOLI | 265 | RSPNTHAB_4 | 68 | CEL26B6_4 | 66 | ferredoxin-like oxidoreductase |
| R | HIN0269 | yieO | 463 | YIEO_ECOLI | 949 | SPDNAPTR_1 | 241 | YK85_YEAST | 172 | ATP-utilizing enzyme |
| E | HIN0270 | dpdA | 549 | DPPA_ECOLI | 1370 | APPA_BACSU | 131 | - | 172 | peptide transport periplasmic |
| S | HIN0271 | - | 253 | - | - | - | - | - | 172 | peptide transport periplasmic |
| S | HIN0272 | yhan | 115 | YHAN_ECOLI | 246 | - | - | - | 172 | peptide transport periplasmic |

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|---|---------|------|------|--------------|--------|-------------|------|-------------|------------------------------|
| L | HIN0273 | polA | 930 | DPO1_ECOLI | 1440 | TTHPOLA_1 | 711 | - | DNA polymerase I |
| S | HIN0274 | ygfe | 100 | ECU28377_9 | 156 | - | - | - | - |
| H | HIN0275 | ygfa | 187 | YGFA_ECOLI | 465 | S51716 | 77 | FTHC_RABIT | 97 |
| O | HIN0276 | clpB | 856 | CLPB_ECOLI | 3001 | SSU20646_1 | 1342 | H101_ARATH | 1826 |
| J | HIN0277 | yjfh | 246 | YJFH_ECOLI | 576 | YACO_BACSU | 212 | S48881 | 119 |
| L | HIN0278 | vacB | 782 | VACB_ECOLI | 1701 | S46946 | 200 | CEL48E8_1 | 188 |
| S | HIN0279 | yhhQ | 235 | YHHQ_ECOLI | 583 | - | - | - | exoribonuclease |
| C | HIN0280 | pdxH | 229 | B43261 | 342 | SYCFPRA_1 | 125 | CEL57B9_10 | 264 |
| R | HIN0281 | yihK | 616 | YIHK_ECOLI | 2415 | S18572 | 243 | YO81_CABEL | 208 |
| E | HIN0282 | glnA | 472 | GLNA_PROVU | 1792 | GLNA_SYNP2 | 962 | FLUG_EMENTI | 69 |
| M | HIN0283 | - | 247 | CLD1_ECOLI | 106 | - | - | - | - |
| M | HIN0284 | - | 404 | S30030 | 88 | - | - | - | pyridoxamine-phosphate oxid. |
| M | HIN0285 | - | 250 | ECKFAAF_2 | 241 | BSU13979_2 | 146 | DPM1_YEAST | 88 |
| M | HIN0286 | - | 185 | EAMWASL_5 | 68 | - | - | - | glutamate--ammonia lyase |
| S | HIN0287 | - | 34 | - | - | - | - | - | lipopolysaccharide chain lei |
| M | HIN0288 | - | 306 | ECONEUSK92_1 | opt104 | - | - | - | putative o-antigen transpor |
| M | HIN0289 | - | 471 | EAMWASL_1 | 1383 | S52736 | 251 | - | glycosyl transferase |
| M | HIN0290 | rffe | 338 | NGOCPSA_2 | 1192 | SPSU_BACSU | 432 | GALX_YEAST | 161 |
| M | HIN0291 | - | 399 | EXOO_RHIME | 82 | - | - | - | undecaprenyl-phosphate gala |
| E | HIN0292 | ndk | 507 | AMPA_ECOLI | 266 | MYCAMINO_1 | 204 | APBOL | 256 |
| F | HIN0293 | yhbe | 141 | NDK_ECOLI | 433 | NDK_BACSU | 359 | BMU18906_1 | 334 |
| R | HIN0294 | yhbe | 390 | YHBZ_ECOLI | 1554 | OBG_BACSU | 836 | YHW8_YEAST | 204 |
| R | HIN0295 | ypma | 307 | YHBE_ECOLI | 556 | XYAM_BACSU | 90 | - | nucleoside diphosphate kin. |
| J | HIN0296 | xplU | 85 | R5EC27 | 371 | RL27_BACSU | 232 | RL27_TOBAC | 246 |
| H | HIN0298 | ispB | 103 | RL21_ECOLI | 421 | RL21_BACSU | 149 | - | membrane protein |
| S | HIN0299 | - | 329 | ISPB_ECOLI | 1082 | GRC3_BACSU | 406 | GGPP_NEUCR | 116 |
| E | HIN0300 | - | 245 | - | - | - | - | - | 50S ribosomal protein L27 |
| C | HIN0301 | arca | 456 | DAGA_ALTHA | 404 | YNXA_BACSU | 99 | GAP1_YEAST | 72 |
| O | HIN0302 | dsbd | 236 | ARCA_ECOLI | 515 | RESD_BACSU | 292 | OMPR_PORAE | 263 |
| R | HIN0303 | - | 579 | ECOWM3_51 | 787 | THIO_BACSU | 53 | THIO_CABEL | 70 |
| F | HIN0304 | purH | 134 | HU32834_4 | 58 | - | - | - | membrane protein |
| F | HIN0305 | purD | 532 | PUR9_ECOLI | 1308 | PUR9_BACSU | 351 | PUR9_CHICK | 229 |
| E | HIN0306 | glyA | 429 | PUR2_SALTY | 1505 | PUR2_BACSU | 652 | S37104 | 660 |
| R | HIN0307 | glpA | 421 | GLYA_ECOLI | 1603 | GLYA_BACSU | 490 | GLYC_YEAST | 291 |
| R | HIN0308 | yacG | 206 | VACE_ECOLI | 440 | S49524 | 187 | HSU18919_1 | 158 |
| L | HIN0309 | rh1B | 68 | YACG_ECOLI | 145 | - | - | - | ATPase |
| R | HIN0310 | - | 418 | RHLB_ECOLI | 1263 | YXIN_BACSU | 360 | S42639 | 369 |
| R | HIN0311 | - | 187 | BM3R_BACME | 112 | BM3R_BACME | 112 | - | Zn finger protein |
| M | HIN0312 | - | 414 | S39629 | 160 | SSP5_STRSA | 82 | - | RNA helicase |
| M | HIN0313 | ftsN | 1032 | S39630 | 344 | BNRCBLAX_1 | 156 | S52525 | transcriptional regulator |
| N | HIN0314 | emrB | 204 | FTSN_ECOLI | 116 | - | - | - | permease |
| N | HIN0315 | emrA | 510 | EMRB_ECOLI | 1840 | TCMA_STRGA | 330 | SCDNAGENS_8 | cell division protein |
| H | HIN0316 | fo1A | 390 | EMRA_ECOLI | 889 | - | - | - | multidrug resistance protein |
| E | HIN0317 | proB | 160 | DYRA_ECOLI | 435 | DYRB_STAATU | 196 | DRT2_ARATH | 92 |
| R | HIN0318 | ygdp | 368 | PROB_SERMA | 863 | TTHPROB_1 | 398 | YHU3_YEAST | dihydrofolate reductase |
| R | HIN0319 | - | 196 | ECU29581_42 | 687 | MSGDNAB_9 | 81 | YSCPSULA_1 | glutamate 5-kinase |
| I | HIN0320 | lgt | 264 | PROARA | 74 | - | - | - | MutT-related pyrophosphoryl |
| | | | 268 | LGT_ECOLI | 534 | - | - | - | permease |
| | | | | | | | | | prolipoprotein diacylglycer |

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|---|---------|------|------|------------|------|-------------|------|------------|-------|------|-------------------------------------|
| H | HIN0321 | thyA | 283 | SYB2B | 211 | S35239 | 210 | TYSY | HUMAN | 172 | thymidylate synthetase |
| F | HIN0322 | yfhC | 173 | YFHC_ECOLI | 383 | YAAJ_BACSU | 267 | S53395 | - | 107 | CMP (dCMP) deaminase |
| S | HIN0323 | | 104 | - | - | - | - | - | - | - | |
| S | HIN0324 | | 100 | - | - | - | - | - | - | - | |
| N | HIN0325 | seca | 901 | SECA_ECOLI | 3084 | SECA_BACSU | 686 | - | - | 72 | preprotein translocase, putative |
| L | HIN0326 | mutT | 136 | MUTT_ECOLI | 337 | MUTX_STRPN | 71 | 80DP_HUMAN | - | 72 | mutator ((AT-GC transversion) |
| P | HIN0327 | kefC | 618 | KEFC_ECOLI | 510 | LIUPP_1 | 119 | YJ90_YEAST | - | 62 | glutathione-dependent Na/H |
| R | HIN0328 | | 254 | ABD1_YEAST | 89 | B48290 | 83 | ABD1_YEAST | - | 89 | SAM-dependent methyltransferase |
| J | HIN0329 | rpsB | 251 | R3EC2 | 1012 | RS2_SPIPL | 878 | A54012 | - | 121 | ribosomal protein S2 |
| J | HIN0330 | tsf | 283 | EFEC3 | 586 | EFTS_SPIPL | 254 | HBS1_YEAST | - | 67 | translation elongation factor |
| T | HIN0331 | lpxD | 341 | S47342 | 1478 | CAPG_STAAL | 92 | HSU23028_1 | - | 88 | UDP-3-O-(R-3-hydroxymyristoyl) |
| L | HIN0332 | hlpA | 197 | S47341 | 540 | M49_STRPY | 77 | KATA_ARATH | - | 90 | histone-like membrane protein |
| M | HIN0333 | | 795 | S47340 | 186 | - | - | - | - | - | outer membrane protein |
| R | HIN0334 | yael | 443 | YABL_ECOLI | 355 | - | - | - | - | - | Zn protease |
| I | HIN0335 | cdsa | 288 | CDSA_ECOLI | 343 | MGU02189_1 | 64 | YBN9_YEAST | - | 81 | CDP-diglyceride synthetase |
| R | HIN0336 | | 239 | Y065_MYCLE | 459 | Y065_MYCLE | 459 | SC6543_8 | - | 163 | membrane protein; new ACR |
| J | HIN0337 | leus | 861 | SYL_ECOLI | 3347 | SYL_BACSU | 450 | D21851_1 | - | 515 | leucyl-tRNA synthetase |
| M | HIN0338 | ripB | 182 | RLPB_ECOLI | 172 | - | - | - | - | - | rare lipoprotein B |
| L | HIN0339 | hola | 344 | HOLA_ECOLI | 342 | - | - | - | - | - | DNA polymerase III delta subunit |
| J | HIN0340 | glyS | 688 | S47780 | 2256 | CTU20547_1 | 134 | - | - | - | glycine-tRNA synthetase beta |
| S | HIN0341 | | 121 | HIU32796_3 | 140 | - | - | - | - | - | |
| S | HIN0342 | | 86 | - | - | - | - | - | - | - | |
| J | HIN0343 | glyQ | 302 | SYGA_ECOLI | 1465 | CTU20547_1 | 625 | - | - | - | glycyl-tRNA synthetase alpha |
| C | HIN0344 | | 508 | BFU18676_1 | 1899 | BFU18676_1 | 1899 | S49465 | - | 1510 | catalase |
| R | HIN0345 | ysjC | 393 | YGIC_ECOLI | 218 | - | - | - | - | - | glutathionylspermidine synthase |
| S | HIN0346 | | 206 | - | - | - | - | - | - | - | |
| S | HIN0347 | | 161 | - | - | - | - | - | - | - | |
| C | HIN0348 | eno | 436 | ECU29580_4 | 1098 | ENO_BACSU | 983 | MCU09194_1 | - | 416 | enolase |
| C | HIN0349 | yhiN | 401 | YHIN_ECOLI | 538 | SAP1P2_2 | 79 | CET06H11_1 | - | 79 | dehydrogenase |
| C | HIN0350 | nrfG | 384 | NRF_ECOLI | 328 | - | - | YSCL9677_4 | - | 89 | cytochrome c biogenesis protein |
| O | HIN0351 | | 176 | YBJQ_ECOLI | 223 | U00018_5 | 86 | S45488 | - | 73 | thioredoxin |
| C | HIN0352 | nrfE | 635 | S49616 | 869 | U00018_1 | 94 | - | - | - | cytochrome c biogenesis protein |
| O | HIN0353 | subB | 267 | SUHB_ECOLI | 889 | MLU15181_9 | 159 | MYOP_HUMAN | - | 164 | inositol monophosphatase |
| N | HIN0354 | | 170 | FMAA_BACNO | 76 | CMG3_BACSU | 66 | - | - | - | pilin |
| N | HIN0355 | | 238 | PPDB_ECOLI | 82 | - | - | - | - | - | general secretion protein |
| S | HIN0356 | | 227 | - | - | - | - | - | - | - | |
| N | HIN0357 | | 101 | GSPI_ERWCA | 69 | - | - | - | - | - | |
| L | HIN0358 | recC | 1121 | EX5C_ECOLI | 528 | - | - | - | - | - | general secretion protein |
| R | HIN0359 | ybad | 149 | YBAD_ECOLI | 548 | SYORPS1_1 | 291 | - | - | - | exodeoxyribonuclease V, nuclear |
| H | HIN0360 | ribD | 372 | RIBG_ECOLI | 833 | RIBG_BACSU | 540 | RIB7_YEAST | - | 111 | Zn finger protein |
| O | HIN0361 | hob | 340 | HHOB_ECOLI | 336 | MLU15180_31 | 93 | ZOI_MOUSE | - | 82 | riboflavin biosynthesis protein |
| L | HIN0362 | mutM | 271 | FPG_ECOLI | 822 | FPG_BACFI | 293 | - | - | - | membrane protease |
| E | HIN0363 | | 511 | ACCL24DD_1 | 1870 | SPGADAGN_1 | 88 | PIGAD67B_1 | - | 272 | formamidopyrimidine-DNA glycosylase |
| R | HIN0364 | | 132 | B49205 | 184 | - | - | - | - | - | glutamate-decarboxylase |
| R | HIN0365 | | 77 | YPFU_ECOLI | 134 | - | - | - | - | - | virulence-associated protein |
| R | HIN0366 | YvjG | 454 | JCI497 | 339 | S44189 | 334 | OAT_VIGAC | - | 184 | aminotransferase |
| J | HIN0367 | rpmG | 56 | S42444 | 231 | RL33_BACST | 95 | - | - | - | ribosomal protein L33 |
| J | HIN0368 | rpmB | 78 | S42443 | 360 | RL28_BACSU | 108 | S50921 | - | 102 | ribosomal protein L28 |

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|---|---------|------|------|-------------|------|-------------|-----|-------------|---------------------------------|
| L | HIN0369 | radC | 234 | RADC_ECOLI | 562 | RDCH_BACSU | 345 | - | DNA repair protein |
| C | HIN0370 | dfr | 400 | DFP_ECOLI | 905 | EPID_STAEP | 129 | SIS2_YEAST | pantothenate metabolism fla |
| F | HIN0371 | dtu | 151 | DUT_ECOLI | 628 | MLU15181_13 | 71 | DUT_LYCES | deoxyuridine triphosphatase |
| R | HIN0372 | ttk | 218 | TTK_ECOLI | 469 | S38906 | 92 | - | transcription regulator |
| S | HIN0373 | yheU | 56 | ECOW67_278 | 132 | - | - | - | - |
| G | HIN0374 | crp | 224 | CRP_ECOLI | 851 | NTCA_ANASP | 75 | CEC30D11_2 | catabolite gene activator |
| R | HIN0375 | - | 392 | ECU29580_10 | 97 | SARPURPO_2 | 55 | - | SAM-dependent methyltransferase |
| R | HIN0376 | - | 351 | ALTCHT60_1 | 153 | YZBA_BACSU | 121 | - | glycosidase |
| R | HIN0377 | - | 130 | YHIT_SYNP7 | 208 | YHIT_SYNP7 | 208 | BTU09405_1 | Zn-binding protein |
| J | HIN0378 | iles | 941 | SYECT | 2503 | SYI_STAUV | 568 | SYV_NEUCR | isoleucyl-tRNA synthetase |
| R | HIN0379 | yaac | 312 | YAAC_ECOLI | 396 | CORFADS_1 | 170 | - | nucleotidyltransferase |
| R | HIN0380 | - | 510 | MVIN_SALTY | 465 | MSGDNAB_12 | 81 | - | permease |
| J | HIN0381 | rpst | 87 | S40547 | 322 | RS20_BACSU | 73 | - | 30S ribosomal protein S20 |
| S | HIN0382 | - | 188 | - | - | - | - | - | - |
| S | HIN0383 | - | 34 | - | - | - | - | - | - |
| H | HIN0384 | menB | 285 | MENB_ECOLI | 1347 | MENB_BACSU | 735 | ECHM_RAT | naphthoate synthase |
| H | HIN0385 | menC | 347 | MENC_ECOLI | 414 | - | - | - | o-succinylbenzoate-CoA synth |
| E | HIN0386 | - | 149 | ACNAROQ_1 | 509 | AROD_MYCTU | 295 | A26020 | 3-dehydroquinase |
| I | HIN0387 | acCB | 155 | BCCP_ECOLI | 352 | ANACCB_2 | 214 | ATTS1191_1 | biotin carboxyl carrier pro |
| I | HIN0388 | acCC | 448 | ACCC_ECOLI | 1961 | ACCC_ANASP | 592 | TOBBCSO_1 | biotin carboxylase |
| P | HIN0389 | - | 289 | S27484 | 72 | - | - | - | transferrin-binding protein |
| S | HIN0390 | - | 481 | HIU32780_7 | 415 | - | - | - | - |
| S | HIN0391 | yhdT | 85 | ECOW67_187 | 187 | - | - | - | pantothenate permease |
| H | HIN0392 | panF | 484 | ECOW67_188 | 1608 | SAU06451_1 | 142 | NAGC_RABIT | integral membrane protein |
| R | HIN0393 | - | 128 | YTRI_BUCAP | 73 | YYAM_BACSU | 71 | CELC54A12_2 | permease |
| M | HIN0394 | flc | 170 | YMFV_BACSU | 119 | YMFV_BACSU | 119 | - | cell filamentation protein |
| J | HIN0395 | - | 191 | ECOPABAA_3 | 70 | - | - | - | ribosomal protein L11 methy |
| R | HIN0396 | prmA | 296 | PRMA_ECOLI | 836 | S41759 | 274 | ODP1_YEAST | nifR3-like nitrogen regulat |
| R | HIN0397 | yhdG | 330 | YHDG_SALTY | 1103 | YACF_BACSU | 466 | YQI2_CABEL | Hin recombinational enhance |
| L | HIN0398 | fls | 99 | pdB1flFA | 398 | CIOACOR_1 | 86 | - | new BCR |
| S | HIN0399 | smpB | 161 | SMPB_ECOLI | 660 | A43259 | 179 | - | phosphofructokinase |
| G | HIN0400 | pflA | 321 | K6P1_ECOLI | 784 | K6PF_BACST | 592 | K6P1_YEAST | - |
| S | HIN0401 | - | 193 | HUI18657_4 | 1014 | - | - | - | - |
| S | HIN0402 | yaad | 272 | YAAA_ECOLI | 822 | - | - | - | - |
| N | HIN0403 | smf | 373 | SMF_ECOLI | 607 | SMF_BACSU | 228 | - | gene required for DNA uptake |
| E | HIN0404 | leuA | 531 | RPPLAS_5 | 1668 | LEU1_LACIA | 817 | SOYSLNA_1 | isopropylmalate synthase |
| E | HIN0405 | leuB | 358 | LEU3_SALTY | 1347 | LEU3_LEPIN | 675 | LEU3_BRANA | 3-isopropylmalate dehydroge |
| E | HIN0406 | leuC | 469 | S40586 | 1484 | LEU2_LACIA | 511 | LEU2_RHIRA | 3-isopropylmalate dehydrata |
| E | HIN0407 | leuD | 200 | LEUD_SALTY | 773 | LEUD_LACIA | 233 | USMLEU1A_1 | 3-isopropylmalate dehydrata |
| R | HIN0408 | - | 1694 | NMIGAF13_1 | 942 | - | - | - | IgA1 protease |
| L | HIN0409 | recF | 359 | RECF_ACTPL | 1322 | RECF_STRCO | 174 | A54817 | repair ATPase |
| L | HIN0410 | dnan | 366 | DNAN_ECOLI | 1206 | S77055_2 | 281 | - | DNA polymerase III beta sub |
| L | HIN0411 | dnad | 454 | DNAA_ECOLI | 1015 | DNAA_BACSU | 583 | CC18_SCHPO | chromosomal replication ini |
| P | HIN0412 | - | 912 | TB12_NEIME | 735 | - | - | - | transferrin-binding protein |
| P | HIN0413 | - | 625 | TB21_NEIME | 176 | - | - | - | transferrin-binding protein |
| S | HIN0414 | - | 481 | HIU32778_4 | 981 | - | - | - | - |
| J | HIN0415 | rpmH | 44 | RU34_ECOLI | 192 | RU34_BACST | 172 | S52680 | 50S ribosomal protein L34 |
| L | HIN0416 | rpmA | 119 | RNPA_ECOLI | 420 | BSRNPA5PO_1 | 83 | - | RNase P protein component |

| Accession | Gene | Protein | Function |
|-----------|------|-------------|--|
| S_HIN0417 | YIDP | YRNP_PROM1 | inner membrane protein |
| R_HIN0418 | YIDC | 60IM_ECOLI | peptidyl-prolyl cis-trans isomerase |
| R_HIN0419 | THDF | THDF_BACSU | lipoprotein signal peptidase |
| O_HIN0420 | PRSA | PRSA_BACSU | involved in penicillin tolerance |
| R_HIN0421 | YJGX | YJGX_ECOLI | competence locus, DNA-binding |
| M_HIN0422 | LSPA | LSPA_STAUV | transcription regulator |
| M_HIN0423 | LYTB | LYTB_ECOLI | dehydrogenase |
| R_HIN0424 | LYTB | LYTB_ECOLI | aldolase |
| R_HIN0425 | YGBI | ECU29579_32 | sugar isomerase or lyase |
| R_HIN0426 | YGBJ | ECU29579_33 | 4-hydroxybutyrate dehydrogenase |
| S_HIN0427 | YGBK | ECU29579_34 | permease |
| R_HIN0428 | YGBL | ECU29579_35 | glycerol uptake facilitator |
| R_HIN0429 | YGBM | ECU29579_36 | IS1016-V6 insertion element |
| C_HIN0430 | YGBM | AFAGBD_3 | thiamin-binding periplasmic permease |
| C_HIN0431 | YGBM | AFAGBD_3 | permease |
| R_HIN0432 | GNTP | GNTP_BACSU | glycerol uptake facilitator |
| S_HIN0433 | GNTP | GNTP_BACSU | IS1016-V6 insertion element |
| R_HIN0434 | GNTP | GNTP_BACSU | thiamin-binding periplasmic permease |
| H_HIN0435 | tbpa | TBPA_ECOLI | transport ATPase |
| H_HIN0436 | yabk | YABK_ECOLI | biotin synthetase |
| R_HIN0437 | yabJ | YABJ_ECOLI | transketolase 2 |
| H_HIN0438 | bioB | BIOB_SERMA | periplasmic binding protein |
| G_HIN0439 | tktb | TKT2_ECOLI | L-ribulose-phosphate 4-epimerase |
| G_HIN0440 | tktb | TKT2_ECOLI | xylose kinase |
| G_HIN0441 | YJFV | YJFV_ECOLI | periplasmic solute-binding |
| G_HIN0442 | YJFV | YJFV_ECOLI | permease |
| S_HIN0443 | YJFV | YJFV_ECOLI | integral membrane protein |
| G_HIN0444 | YJFV | YJFV_ECOLI | transcriptional regulator |
| R_HIN0445 | YJFV | YJFV_ECOLI | phosphoserine phosphatase |
| R_HIN0446 | YJFV | YJFV_ECOLI | Mg2+ transport protein |
| R_HIN0447 | YJFV | YJFV_ECOLI | integral membrane protein |
| R_HIN0448 | YJFV | YJFV_ECOLI | restriction endonuclease |
| R_HIN0449 | YJFV | YJFV_ECOLI | site-specific DNA methyltransferase |
| E_HIN0450 | YJFV | YJFV_ECOLI | methionine synthase |
| S_HIN0451 | YJFV | YJFV_ECOLI | ferredoxin |
| P_HIN0452 | YJFV | YJFV_ECOLI | putative B type cytochrome |
| R_HIN0453 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| F_HIN0454 | YJFV | YJFV_ECOLI | dimethylsulfoxide reductase |
| R_HIN0455 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| L_HIN0456 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| E_HIN0457 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| C_HIN0458 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| C_HIN0459 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| C_HIN0460 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| C_HIN0461 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| C_HIN0462 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| S_HIN0463 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |
| P_HIN0464 | YJFV | YJFV_ECOLI | anaerobic dimethyl sulfoxide reductase |

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|-----------|------|-------------|--------|-------------|------------|-----|------------------------------|
| P_HIN0465 | 92 | S18588 | 88 | - | AT7A_HUMAN | 82 | mercury scavenger protein |
| P_HIN0466 | 614 | SCMSMDR1A | 383 | HETA_ANASP | SCMSMDR1A | 383 | transport ATPase |
| R_HIN0467 | 298 | ARAL_STRLI | 160 | ARAL_STRLI | - | - | Arac-like transcription reg |
| S_HIN0468 | 113 | YAC7_ALCEU | 171 | B26872 | - | - | new BCR |
| S_HIN0469 | 460 | - | - | - | - | - | helicase-like protein |
| L_HIN0470 | 505 | T3RE_BPP1 | 75 | - | MTHZ_METTF | 78 | adenine-specific type III m |
| L_HIN0471 | 629 | T3MO_BPP1 | 146 | - | - | - | ribonuclease HTI |
| S_HIN0472 | 194 | - | - | - | - | - | lipid A disaccharide synthe |
| L_HIN0473 | 197 | RNH2_ECOLI | 388 | S46901 | SC23CDS_13 | 67 | acyl-[acyl-carrier-protein] |
| M_HIN0474 | 399 | LPXB_ECOLI | 1141 | SPSB_BACSU | - | 94 | (3R)-hydroxymyristoyl acyl |
| M_HIN0475 | 262 | LPXA_YEREN | 937 | YYAI_BACSU | ATU22964_1 | - | uridine 5'-monophosphate kin |
| M_HIN0476 | 148 | FABZ_RICRI | 314 | YCSD_BACSU | - | - | formate-dependent nitrite r |
| S_HIN0477 | 70 | HIU32781_8 | opt101 | - | - | - | cytochrome precursor |
| S_HIN0478 | 485 | YJGX_ECOLI | 111 | - | - | - | cytochrome C552 precursor |
| F_HIN0479 | 237 | S45236 | 947 | S51096 | AKH_DAUCA | 80 | helicase |
| C_HIN0480 | 321 | NRFD_ECOLI | 634 | - | - | - | membrane protein, new BCR |
| C_HIN0481 | 225 | NRFC_ECOLI | 772 | NARH_BACSU | FER_METBA | 86 | membrane protein |
| C_HIN0482 | 226 | ECOUW89_118 | 256 | - | - | - | cytochrome d complex termin |
| C_HIN0483 | 538 | NRFA_ECOLI | 935 | - | - | - | cytochrome oxidase d subuni |
| L_HIN0484 | 1280 | HRPA_ECOLI | 2092 | BSGENR_38 | YMS2_CAEEL | 418 | CTP synthetase |
| R_HIN0485 | 124 | YGDD_ECOLI | 156 | YWDK_BACSU | - | - | integral membrane proteib |
| R_HIN0486 | 150 | GLPT_BACSU | 67 | GLPT_BACSU | - | - | glutamate/aspartate transpo |
| C_HIN0487 | 378 | APPB_ECOLI | 1051 | - | - | - | glutamine permease |
| C_HIN0488 | 521 | CYDA_ECOLI | 1257 | - | - | - | glutamine-binding periplasm |
| F_HIN0489 | 545 | ECU29580_5 | 2348 | PYRG_BACSU | GLU30328_1 | 455 | UDP-N-acetylglucosamine eno |
| H_HIN0490 | 178 | PNUC_ECOLI | 98 | - | - | - | transcription regulator |
| H_HIN0491 | 257 | YCKI_BACSU | 611 | YCKI_BACSU | S51433 | 158 | minor sigma-37 factor |
| E_HIN0492 | 238 | YCKJ_BACSU | 452 | YCKJ_BACSU | - | - | membrane protein |
| E_HIN0493 | 257 | YCKK_BACSU | 362 | YCKK_BACSU | S33754 | 70 | membrane protein |
| M_HIN0494 | 424 | MURZ_ENTCL | 1369 | MURZ_BACSU | ARO_ABRANA | 74 | superoxide dismutase |
| R_HIN0495 | 85 | ECOUW67_118 | 212 | - | - | - | cytochrome c biogenesis tra |
| L_HIN0496 | 105 | ECOUW67_119 | 60 | RSBV_BACSU | - | - | cytochrome c biogenesis pro |
| S_HIN0497 | 214 | ECOUW67_120 | 442 | - | - | - | inner membrane protein |
| R_HIN0498 | 167 | ECOUW67_121 | 375 | - | - | - | cytochrome c biogenesis pro |
| R_HIN0499 | 261 | ECOUW67_122 | 998 | - | - | - | cytochrome c biogenesis pro |
| R_HIN0500 | 264 | ECOUW67_123 | 906 | - | - | - | cytochrome c biogenesis pro |
| C_HIN0501 | 215 | DSECN | 342 | MKL_MYCLE | MDR1_MOUSE | 118 | cytochrome c biogenesis tra |
| C_HIN0502 | 212 | YEJW_ECOLI | 277 | SA4220SOD_1 | S36129 | 175 | superoxide dismutase |
| C_HIN0503 | 221 | YEJV_ECOLI | 737 | PLNRTABC_4 | ABCI_MOUSE | 106 | cytochrome c biogenesis tra |
| C_HIN0504 | 246 | YEJU_ECOLI | 709 | - | - | - | cytochrome c biogenesis pro |
| C_HIN0505 | 67 | YOJM_ECOLI | 154 | U00018_1 | - | - | inner membrane protein |
| C_HIN0506 | 173 | YEJS_ECOLI | 304 | - | - | - | cytochrome c biogenesis pro |
| C_HIN0507 | 648 | YEJR_ECOLI | 1668 | U00018_1 | - | - | cytochrome c biogenesis pro |
| C_HIN0508 | 181 | YEJO_ECOLI | 452 | THI1_CORNE | YCX3_YEAST | 66 | cytochrome c biogenesis pro |
| C_HIN0509 | 459 | YEJP_ECOLI | 414 | LUKS_STAUV | SSN6_YEAST | 72 | thioredoxin-like cytochrome |
| S_HIN0510 | 44 | - | - | - | - | - | thioredoxin-like, TPR repea |
| S_HIN0511 | 102 | - | - | - | - | - | DNA ligase |
| L_HIN0512 | 679 | ECOLI_1 | 1651 | RMU10483_1 | MMU15037_1 | 132 | DNA ligase |

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| | | | | | | | | |
|---|---------|-----|------------|------|------|------------|-----|-------------------------------|
| S | HIN0513 | 328 | PAPER1A | 125 | - | - | - | cysteine synthetase |
| E | HIN0514 | 272 | CYS2_SALTY | 697 | - | - | - | O-acetylserine sulfhydrylase |
| E | HIN0515 | 316 | SSU23436_1 | 1008 | 290 | S49587 | 295 | salic acid transporter |
| G | HIN0516 | 407 | NANT_ECOLI | 355 | 176 | S34961 | 214 | ADP-heptose:LPS heptosyltra |
| M | HIN0517 | 346 | RFAF_ECOLI | 717 | - | - | - | xylose operon regulator |
| G | HIN0518 | 387 | XYLR_ECOLI | 1158 | 114 | - | - | Na+/H+ antiporter |
| P | HIN0519 | 468 | NHAC_BACFI | 375 | 375 | - | - | aspartate aminotransferase |
| E | HIN0520 | 390 | PATB_BACSU | 348 | 348 | S48737 | 99 | xylose permease |
| G | HIN0521 | 375 | XYLH_ECOLI | 1327 | 994 | - | - | D-xylose transport ATPase |
| G | HIN0522 | 503 | XYLF_ECOLI | 1853 | 349 | ABC2_MOUSE | 129 | D-xylose-binding periplasmic |
| G | HIN0523 | 332 | XYLF_ECOLI | 1271 | 162 | - | - | xylose isomerase |
| G | HIN0524 | 439 | ECXYLIK_1 | 1752 | 1170 | - | - | xylulose kinase |
| G | HIN0525 | 511 | MOGXLYITOL | 249 | 226 | YNE7_CAEEL | 93 | ADP-L-glycero-d-mannoheptos |
| M | HIN0526 | 308 | RPAF_ECOLI | 769 | 88 | GALE_RAT | 66 | thioredoxin |
| O | HIN0527 | 167 | THIO_STRCL | 113 | 113 | S46521 | 103 | deoxyribose-phosphate aldol |
| F | HIN0528 | 223 | DEOC_MYCHO | 446 | 446 | - | - | ATPase, ATP-dependent prote |
| H | HIN0529 | 509 | YIFB_ECOLI | 1018 | 71 | S37138 | 100 | GTPase |
| R | HIN0530 | 205 | S40810 | 714 | 309 | MX1_PERFL | 43 | membrane protein |
| R | HIN0531 | 292 | PASLAPCABT | 486 | - | - | - | oligopeptide transport ATPa |
| E | HIN0532 | 332 | OPPF_SALTY | 1183 | 671 | MDL2_YEAST | 156 | oligopeptide transport ATPa |
| E | HIN0533 | 323 | OPPD_SALTY | 1281 | 647 | MDR1_CAEEL | 104 | oligopeptide permease |
| E | HIN0534 | 311 | OPPC_SALTY | 1118 | 597 | - | - | oligopeptide permease |
| E | HIN0535 | 306 | OPPB_SALTY | 1226 | 434 | CAN1_YEAST | 58 | periplasmic oligopeptide-bi |
| E | HIN0536 | 542 | OPPA_SALTY | 568 | 220 | - | - | transaldolase B |
| C | HIN0537 | 317 | S40535 | 1276 | 110 | S51462 | 599 | Zn finger protein |
| L | HIN0538 | 76 | A48927 | 47 | - | A48927 | 47 | permease |
| R | HIN0539 | 366 | CSTA_ECOLI | 124 | - | - | - | cell division protein ? |
| S | HIN0540 | 58 | - | - | - | - | - | SAM-dependent methyltransfe |
| M | HIN0541 | 151 | YABB_ECOLI | 474 | 72 | - | - | cell division protein |
| M | HIN0542 | 321 | QOECFT | 588 | 191 | - | - | penicillin-binding protein |
| M | HIN0543 | 107 | FTSL_ECOLI | 160 | - | - | - | UDP-MurNac-tripeptide synth |
| M | HIN0544 | 610 | PBP3_ECOLI | 949 | 113 | A54099 | 71 | phospho-N-acetylmuramoyl-l-pe |
| M | HIN0545 | 488 | S40595 | 683 | 310 | - | - | cell division, integral mem |
| M | HIN0546 | 457 | MURF_ECOLI | 441 | 158 | - | - | UDP-N-acetylglucosamine--N- |
| M | HIN0547 | 360 | MURF_ECOLI | 1496 | 377 | - | - | UDP-N-acetylmuramate-alanin |
| M | HIN0548 | 437 | CHECME | 1067 | 177 | GPT_CRILLO | 74 | D-alanine-D-alanine ligase |
| M | HIN0549 | 394 | FTSW_ECOLI | 1037 | 426 | FOLC_YEAST | 63 | cell division protein, chap |
| M | HIN0550 | 351 | BVECMG | 747 | 217 | MICPND4_2 | 76 | cell division, GTPase |
| M | HIN0551 | 475 | MURC_ECOLI | 1214 | 185 | - | - | UDP-3-0-acyl N-acetylglucos |
| M | HIN0552 | 306 | CHECDL | 532 | 246 | TOBBCSO_1 | 68 | chorismate mutase |
| M | HIN0553 | 254 | FTSQ_ECOLI | 250 | 76 | - | - | ATP(GTP)-utilizing enzyme |
| M | HIN0554 | 425 | FTSA_ECOLI | 855 | 272 | HS77_YEAST | 48 | nitrogen regulatory IIA pro |
| M | HIN0555 | 421 | FTSZ_ECOLI | 709 | 612 | S35404 | 327 | transport ATPase |
| M | HIN0556 | 305 | LPXC_ECOLI | 1235 | - | - | - | |
| E | HIN0557 | 385 | PHEA_ERWHE | 967 | 112 | PHA2_YEAST | 76 | |
| R | HIN0558 | 289 | KPORFPTS_1 | 964 | 102 | - | - | |
| E | HIN0559 | 164 | PTSN_ECOLI | 188 | 43 | - | - | |
| N | HIN0560 | 241 | YHBG_ECOLI | 933 | 162 | ABC2_MOUSE | 150 | |

| | | | | | | | | | |
|---|---------|------|------|-------------|------|-------------|-----|------------|------------------------------|
| S | HIN0561 | yhbN | 172 | YHBN_ECOLI | 258 | - | - | - | sigma-32 RNA polymerase sub |
| L | HIN0562 | yrbK | 209 | ECOW67_128 | 228 | - | - | - | secretion protein ? |
| S | HIN0563 | yjgA | 178 | YJGA_ECOLI | 497 | - | - | - | hypoxanthine phosphoribosyl |
| N | HIN0564 | pmbA | 451 | PMBA_ECOLI | 1112 | - | - | - | proton-glutamate symporter |
| F | HIN0565 | hpt | 179 | HPRT_ECOLI | 542 | HPRT_BACSU | 369 | HPRT_LEIDO | anaerobic ribonucleotide |
| F | HIN0566 | gltP | 440 | GLTT_BACCA | 130 | GLTT_BACCA | 130 | S28902 | transport ATPase protein |
| F | HIN0567 | nrdG | 155 | NRDG_ECOLI | 581 | - | 287 | PMD1_SCHPO | transport ATPase |
| C | HIN0568 | cydC | 576 | CYDC_ECOLI | 517 | SAU29478_1 | 214 | S30327 | thioredoxin |
| C | HIN0569 | cydD | 586 | CYDD_ECOLI | 1245 | HETA_ANASP | 422 | YH06_YEAST | thioredoxin-related protein |
| O | HIN0570 | trxB | 318 | RDECT | 909 | S38988 | 129 | - | ferrochelatase (protoheme f |
| O | HIN0571 | hemH | 262 | ANATRXA_1 | 129 | ANATRXA_1 | 129 | - | thioesterase? new ACR |
| P | HIN0572 | hcmH | 323 | YEU25113_2 | 442 | AAT_BACSU | 56 | HEMZ_HORVU | D-lactate dehydrogenase |
| R | HIN0573 | ybdB | 138 | YBDB_ECOLI | 357 | CMA2_BACSU | 147 | YPHR_HALHA | outer membrane protein |
| S | HIN0574 | ycjD | 157 | HU32774_5 | 140 | - | 79 | YEI1_YEAST | glutaredoxin |
| C | HIN0575 | yghM | 1027 | YEI1_YEAST | 137 | TRPTPP5X_1 | 79 | - | histidinol-phosphate transa |
| M | HIN0576 | ompA | 353 | ECOOMPACZ_1 | 297 | - | 486 | A48329 | phosphoserine aminotransfer |
| O | HIN0577 | ydhD | 120 | LPNTSAA_1 | 294 | - | 569 | EPIP_RABIT | |
| E | HIN0578 | serC | 366 | ZMOHSHA_1 | 491 | HIS8_BACSU | 486 | - | |
| E | HIN0579 | | 362 | SERC_YEREN | 678 | BCAPPSAT_2 | 569 | - | |
| S | HIN0580 | | 114 | - | | - | | - | |
| H | HIN0581 | | 188 | PABC_ECOLI | 72 | - | 109 | - | isochorismate mutase |
| H | HIN0582 | | 328 | S33968 | 112 | PABB_BACSU | 109 | S33968 | anthranilate synthase I |
| H | HIN0583 | pabA | 193 | TRPG_LACLA | 232 | TRPG_LACLA | 232 | HPMOXG_3 | para-aminobenzoate synthase |
| H | HIN0584 | metX | 384 | ECU28377_40 | 1686 | MC377_1 | 209 | S51425 | S-adenosylmethionine synthe |
| E | HIN0585 | yggI | 156 | YGGI_ECOLI | 380 | JU0191 | 50 | - | Zn-dependent protease |
| M | HIN0586 | | 121 | A06364_1 | 98 | - | 128 | - | opacity (membrane) protein |
| E | HIN0587 | artM | 227 | ARTM_ECOLI | 379 | YCKA_BACSU | 208 | - | arginine permease |
| E | HIN0588 | artQ | 221 | ARTQ_ECOLI | 458 | YCKA_BACSU | 98 | - | arginine-binding protein |
| E | HIN0589 | artP | 239 | PASLAPCABT | 374 | LMU08865_1 | 425 | RNGLURCA_1 | arginine transport ATPase |
| E | HIN0590 | lpcA | 243 | ARTP_ECOLI | 606 | GLNQ_BACST | 85 | S51433 | phosphoheptose isomerase |
| R | HIN0591 | | 194 | ECODINU_2 | 757 | YNGB_CLOPE | 85 | - | trRNA N-glycosidase ? |
| R | HIN0592 | | 185 | RIP3_MAIZE | 65 | - | 578 | RIP3_MAIZE | dipeptide transport ATPase |
| E | HIN0593 | dppF | 327 | DPPF_ECOLI | 1265 | OPPF_LACLA | 645 | MDR2_MOUSE | dipeptide transport ATPase |
| E | HIN0594 | dppD | 330 | DPPD_ECOLI | 1210 | OPPC_BACSU | 399 | - | dipeptide permealase |
| E | HIN0595 | dppC | 295 | DPPC_ECOLI | 989 | DPPB_BACSU | 374 | - | dipeptide transport system I |
| E | HIN0596 | dppB | 333 | DPPB_ECOLI | 601 | S27667 | 421 | HJBYDH | DNA helicase II |
| L | HIN0597 | uvrD | 727 | UVRD_ECOLI | 1364 | - | 57 | - | thioredoxin-like protein (c |
| O | HIN0598 | ygcF | 211 | ECU29580_2 | 123 | - | 192 | PTPS_RAT | 6-pyruvoyl-tetrahydropterin |
| H | HIN0599 | | 141 | ECU29579_62 | 63 | - | 141 | GUAA_DICDI | NTP-utilizing enzyme |
| R | HIN0600 | | 196 | GUAA_DICDI | 74 | - | 51 | - | secreted protein ? |
| R | HIN0601 | | 47 | STALACBAD_1 | 51 | STALACBAD_1 | 192 | ATTS1826_1 | branched-chain amino acid a |
| E | HIN0602 | gcvA | 343 | BSCELABCD_6 | 192 | BSCELABCD_6 | 61 | - | glycine cleavage system tra |
| C | HIN0603 | ygde | 297 | GCVA_ECOLI | 482 | YMBI_BACSU | 441 | - | SAM-dependent methyltransfe |
| L | HIN0604 | succ | 363 | YGDE_ECOLI | 431 | MUS2_STAUV | 441 | - | succinyl-CoA synthetase bet |
| C | HIN0605 | sucD | 389 | SUCC_ECOLI | 1329 | SUCC_THIEFL | 829 | A45242 | succinyl-CoA synthetase alpi |
| C | HIN0606 | yciO | 293 | SYBCSA | 1253 | SUCC_THIEFL | 85 | DDU23408_1 | new ACR, yeast growth facto |
| R | HIN0607 | yciL | 207 | ECU1811_1 | 488 | YMLC_BACSU | 216 | SUA5_YEAST | pseudou synthetase |
| E | HIN0608 | | 357 | ECU1811_4 | 981 | U00021_7 | | - | |

| | | | | | | | | | |
|---|---------|------|-----|--------------|------|--------------|------|------------|--------------------------------|
| E | HIN0609 | cysB | 323 | CYSB_ECOLI | 885 | M28509_1 | 196 | - | Cys regulon transcriptional |
| L | HIN0610 | yfcb | 314 | YFCB_ECOLI | 463 | BSDNA320D_2 | 144 | S51868 | N6-adenine-specific DNA meti |
| S | HIN0611 | | 167 | | | | | | |
| C | HIN0612 | pta | 711 | ECOPTA_1 | 2125 | PTA_BACSU | 575 | PTA_METTE | phosphotransacetylase |
| C | HIN0613 | ackA | 401 | ACKA_ECOLI | 894 | ACKA_BACSU | 431 | - | acetate kinase |
| C | HIN0614 | | 147 | ECOACKA | 110 | - | - | - | acetate kinase - frameshift |
| N | HIN0615 | cvpA | 163 | CVPA_ECOLI | 508 | - | - | - | colicin V production protein |
| F | HIN0616 | purF | 505 | XQEC | 930 | PUR1_BACSU | 337 | PUR1_SCHPO | amidophosphoribosyltransferase |
| G | HIN0617 | | 296 | SUUA_VIBCH | 76 | A61316 | 69 | YKK7_YEAST | DTDP-glucose dehydratase |
| E | HIN0618 | argR | 151 | ARGR_ECOLI | 523 | AHRC_BACSU | 66 | - | arginine repressor |
| C | HIN0619 | mdh | 311 | ECOUW67_165 | 1003 | LDH_THBAQ | 122 | MDHM_YEAST | malate dehydrogenase |
| J | HIN0620 | lysU | 502 | ECOUW93_45 | 1252 | STA5SR_1 | 720 | HUMORFKG15 | lysyl-tRNA synthetase |
| J | HIN0621 | prfB | 370 | RF2_ECOLI | 1520 | RF2_BACSU | 759 | YSCL8003_2 | peptide chain release factor |
| O | HIN0622 | dsbC | 229 | DSBC_ERWCH | 568 | - | - | - | thiol:disulfide isomerase |
| L | HIN0623 | recJ | 575 | RECJ_ECOLI | 935 | - | - | - | single-stranded-DNA-specific |
| O | HIN0624 | | 235 | LPUI5278_1 | 77 | - | - | - | thiol:disulfide interchange |
| F | HIN0625 | pfs | 229 | PFS_ECOLI | 649 | - | - | S39502 | nucleosidase |
| H | HIN0626 | | 913 | NMU18558_1 | 101 | - | - | - | transferrin receptor |
| C | HIN0627 | | 532 | LDLP_ECOLI | 218 | - | - | - | L-lactate permease |
| F | HIN0628 | cmk | 231 | KCY_ECOLI | 678 | KCY_BACSU | 476 | KAD_CYPCA | cytidylate kinase |
| J | HIN0629 | rpsA | 549 | RS1_ECOLI | 2035 | S49523 | 482 | SC9959_11 | 30S ribosomal protein S1 |
| L | HIN0630 | himD | 94 | IHRB_SERMA | 291 | DBH_CLOPA | 178 | DBH_CRYPH | DNA-binding protein |
| E | HIN0631 | | 97 | S43882 | 62 | YMLA_BACSU | 62 | S43882 | membrane protein |
| L | HIN0632 | yciM | 396 | HUMORF1_1 | 82 | BSU02604_3 | 73 | HUMORF1_1 | DNA-binding Zn finger prote |
| F | HIN0633 | pyrF | 230 | DCOP_ECOLI | 743 | DCOP_BACSU | 212 | DCOP_EMENT | oxotidine-5'-phosphate deca |
| R | HIN0634 | yciH | 106 | YCIH_ECOLI | 411 | SLU21192_1 | 79 | YRP1_METVA | new ACR, sul1 family, role |
| L | HIN0635 | | 221 | S39317 | 106 | DMAA_STRCO | 84 | - | ATPase (chromosomal replica |
| F | HIN0636 | uraA | 414 | URAA_ECOLI | 505 | PYRP_BACCL | 399 | ANUAPC_1 | uracil permease |
| F | HIN0637 | upp | 208 | UPP_ECOLI | 908 | UPP_STRSL | 585 | FUR1_YEAST | uracil phosphoribosyl trans |
| L | HIN0638 | dnax | 688 | DP3X_ECOLI | 1092 | BSDNAZX_1 | 617 | GGU12438_1 | ATPase (DNA replication) |
| F | HIN0639 | apt | 180 | APT_ECOLI | 613 | S52767 | 372 | TAU22442_1 | adenine phosphoribosyltrans |
| C | HIN0640 | lpd | 478 | ECACEX_4 | 1400 | DLDH_BACSU | 630 | DLDH_HUMAN | dihydroliipoamide dehydrogen |
| C | HIN0641 | aceF | 567 | XXECDP | 1071 | S14426 | 390 | HUME2K_1 | dihydroliipoamide acetyltran |
| S | HIN0642 | aceE | 886 | DEECPEV | 1209 | S42053 | 69 | TKT_HUMAN | pyruvate dehydrogenase |
| S | HIN0643 | yccG | 152 | YCCG_ECOLI | 506 | YPJF_BACSU | 305 | - | |
| S | HIN0644 | | 155 | - | - | - | - | - | |
| S | HIN0645 | | 367 | ECOGUSRABC_6 | 145 | - | - | - | |
| O | HIN0646 | dnak | 635 | IOECDK | 2264 | DNAX_CLOAB | 1185 | HS7M_PEA | Dnak chaperone |
| O | HIN0647 | dnaj | 394 | DNAJ_ECOLI | 984 | DNAJ_MYCLE | 498 | SCJ1_YEAST | DnaJ chaperone |
| E | HIN0648 | proA | 417 | PROA_SERMA | 1327 | PROA_BACSU | 630 | ATP5CSBG_1 | gamma-glutamyl phosphate re |
| R | HIN0649 | y1cG | 220 | ECOUW82_12 | 340 | - | 60 | LMP1_EBVC | integral membrane protein |
| R | HIN0650 | | 266 | Y1FK_ECOLI | 64 | STAAGRILOC_4 | 60 | - | permease |
| N | HIN0651 | bcr | 398 | BCR_ECOLI | 867 | TCMA_STRGA | 164 | SC23CDS_22 | permease |
| F | HIN0652 | yejD | 232 | YEJD_ECOLI | 699 | YPUL_BACSU | 161 | - | pseudou synthetase |
| S | HIN0653 | | 206 | - | - | - | - | - | |
| C | HIN0654 | | 756 | MAOX_BACST | 639 | MAOX_BACST | 639 | MAOC_FLATR | phosphate acetyltransferase |
| R | HIN0655 | | 647 | MDOB_ECOLI | 67 | - | 76 | HUMARSBX_1 | phosphoglycerol transferase |
| L | HIN0656 | uvrB | 679 | UVRB_ECOLI | 2576 | A42385 | 1224 | HCA5_YEAST | excinuclease helicase, subun |

| Accession | Gene | Protein | Function |
|-----------|------|-------------|---------------------------------|
| S_HIN0657 | 322 | LEILHSPG8_1 | - |
| S_HIN0658 | 206 | LEILHSPG8_1 | - |
| L_HIN0659 | 101 | DIHINTA | homolog of virulence-associated |
| L_HIN0660 | 107 | DIHINTA_11 | homolog of virulence-associated |
| R_HIN0661 | 556 | YJJK_ECOLI | transport ATPase |
| R_HIN0662 | 127 | ECU18555_7 | membrane protein |
| R_HIN0663 | 353 | ECU18555_7 | PilT-related ATPase |
| R_HIN0664 | 74 | AAC6_CITDI | acetyltransferase |
| S_HIN0665 | 154 | - | - |
| L_HIN0666 | 1146 | MFD_ECOLI | transcription-repair coupling |
| L_HIN0667 | 466 | HHA_ECOLI | membrane protease |
| H_HIN0668 | 296 | XMECB | acetyl-CoA carboxylase beta |
| H_HIN0669 | 437 | FOLC_ECOLI | folylpolyglutamate synthase |
| H_HIN0670 | 244 | YEIF_ECOLI | membrane protein |
| E_HIN0671 | 358 | S39881_1 | homoserine acetyltransferase |
| L_HIN0672 | 880 | GYRA_RICPR | DNA gyrase, subunit A |
| S_HIN0673 | 587 | TI5206 | - |
| S_HIN0674 | 128 | - | - |
| S_HIN0675 | 27 | - | - |
| S_HIN0676 | 59 | - | - |
| S_HIN0677 | 38 | - | - |
| P_HIN0678 | 245 | BTUC_ECOLI | hemin permease |
| P_HIN0679 | 263 | ECCBRABCD_4 | ferric enterobactin transpor |
| R_HIN0680 | 268 | ECU29580_10 | SAM-dependent methyltransfer |
| R_HIN0681 | 238 | YRNH_BUCAP | metal-binding protein |
| P_HIN0682 | 286 | HAGI_EIKCO | tellurite resistance protein |
| L_HIN0683 | 682 | SYECMT | methionine-tRNA synthetase |
| C_HIN0684 | 386 | MRP_ECOLI | chromosome partitioning ATP |
| C_HIN0685 | 220 | VIBNPHFO_1 | oxygen-insensitive NAD(P)H |
| G_HIN0686 | 228 | U04328_2 | acylnneuraminate cytidyltr |
| R_HIN0687 | 72 | A33595 | IS element |
| S_HIN0688 | 141 | YHBC_ECOLI | new BCR |
| L_HIN0689 | 495 | NUSA_ECOLI | transcription factor |
| L_HIN0690 | 829 | ECUW67_98 | translation initiation factor |
| L_HIN0691 | 1055 | MYCGLTX_4 | type I restriction enzyme |
| L_HIN0692 | 459 | SCU25815_1 | type I restriction enzyme |
| R_HIN0693 | 581 | TI1M1_ECOLI | type I restriction enzyme |
| R_HIN0694 | 128 | RBFA_ECOLI | ribosome-binding protein |
| F_HIN0695 | 312 | TRUB_ECOLI | pseudou synthetase |
| E_HIN0696 | 377 | TYRA_ERMHE | chorismate mutase |
| S_HIN0697 | 279 | ECU29581_8 | - |
| L_HIN0698 | 261 | XELGATA4B_1 | Zn finger protein |
| S_HIN0699 | 126 | ECU29581_25 | - |
| R_HIN0700 | 437 | ECU29581_24 | - |
| L_HIN0701 | 178 | S24930 | - |
| R_HIN0702 | 140 | YOHJ_ECOLI | aminotransferase |
| R_HIN0703 | 231 | YOHK_ECOLI | nuclease, partitioning |
| F_HIN0704 | 509 | DGTP_ECOLI | membrane protein |
| | | | permease |
| | | | deoxyguanosinetriphosphate |

| | | | | | | | | |
|-----------|------|-------------|------|-------------|------|------------|------|------------------------------|
| R_HIN0705 | 647 | ECOW93_302 | 385 | S47441 | 356 | CEL42A10_5 | 240 | transport ATPase |
| R_HIN0706 | 229 | YADF_ECOLI | 667 | CYNT_SYNP7 | 94 | CAHC_TOBAC | 124 | carbonic anhydrase |
| U_HIN0707 | 477 | SYECNT | 2031 | MC028_1 | 442 | 63KD_BRUMA | 234 | asparagine--trNA synthetase |
| H_HIN0708 | 173 | RISB_ECOLI | 605 | RISB_BACSU | 334 | S50974 | 129 | riboflavin synthase beta ch |
| L_HIN0709 | 144 | NUSB_ECOLI | 376 | - | - | - | - | transcription termination p |
| R_HIN0710 | 345 | YDXA_ECOLI | 106 | YDXA_BACSU | 106 | PUR2_SCHPO | 68 | hydrogenase expression fac |
| I_HIN0711 | 163 | pgpA | 314 | - | - | - | - | phosphatidylglycerophosphat |
| R_HIN0712 | 210 | YIGJ_ECOLI | 140 | - | - | - | - | integral membrane protein |
| E_HIN0713 | 270 | DAPB_ECOLI | 958 | DAPB_BRELA | 130 | - | - | dehydrodipicolinate reducta |
| C_HIN0714 | 82 | YFAE_ECOLI | 203 | S04543 | 106 | JA0099 | 89 | ferredoxin |
| S_HIN0715 | 253 | - | - | - | - | - | - | - |
| J_HIN0716 | 329 | SYFA_ECOLI | 1257 | SYFA_THETH | 337 | SYFM_YEAST | 155 | phenylalanyl-trNA synthetasi |
| J_HIN0717 | 795 | ECOHMA_4 | 2711 | SYFB_BACSU | 350 | MMU10118_1 | 67 | phenylalanyl-trNA synthetasi |
| L_HIN0718 | 96 | IHPA_ECOLI | 322 | DBH_BACSU | 186 | DBH_CRYPH | 156 | DNA-binding protein |
| I_HIN0719 | 161 | NLPC_ECOLI | 382 | S05542 | 108 | - | - | lipoprotein |
| N_HIN0720 | 105 | YIDK_ECOLI | 211 | PPCK_CHLLI | 67 | NAMI_CANFA | 94 | permease (incomplete ?) |
| R_HIN0721 | 194 | YIDJ_ECOLI | 125 | - | - | ARS_CHLRE | 70 | sulfatase (incomplete ?) |
| S_HIN0722 | 271 | PCU13148_1 | 83 | - | - | SC6543_6 | 70 | new ACR |
| J_HIN0723 | 199 | ECOHMA_1 | 698 | S05346 | 445 | - | - | initiation factor 3 |
| J_HIN0724 | 65 | R5EC35 | 239 | R5BS35 | 151 | - | - | 50S ribosomal protein I35 |
| J_HIN0725 | 117 | RL20_ECOLI | 552 | RL20_BACST | 378 | - | - | 50S ribosomal protein I20. |
| L_HIN0726 | 1211 | EXSB_ECOLI | 299 | ADDA_BACSU | 73 | HJBYDH | 97 | exodeoxyribonuclease V, hel |
| L_HIN0727 | 640 | ECU29581_30 | 269 | - | - | YE06_YEAST | 80 | exodeoxyribonuclease V, hel |
| S_HIN0728 | 148 | - | - | - | - | - | - | - |
| R_HIN0729 | 601 | LON_BACBR | 88 | LON_BACBR | 88 | LONM_HUMAN | 85 | Lon/Sms-related endopeptida |
| I_HIN0730 | 177 | FABA_ECOLI | 743 | - | - | - | - | 3-hydroxydecanoyl-lacyl-car |
| R_HIN0731 | 242 | CEL57B9_4 | 72 | - | - | CEL57B9_4 | 72 | metal-binding enzyme ? |
| J_HIN0732 | 89 | R3EC15 | 360 | RS15_BACST | 241 | RS15_HAIMA | 57 | ribosomal protein S15 |
| M_HIN0733 | 479 | PBP4_ECOLI | 425 | PBP_BACSU | 162 | YOJ6_CABEL | 70 | D-alanyl-D-alanine carboxyp |
| L_HIN0734 | 158 | GREB_ECOLI | 653 | MLU15183_7 | 120 | - | - | transcription elongation fac |
| S_HIN0735 | 110 | YHBY_ECOLI | 231 | CCMW_SYNP7 | 81 | - | - | new BCR |
| M_HIN0736 | 209 | FTSJ_ECOLI | 870 | - | - | YBRI_YEAST | 203 | cell division, SAM-dependen |
| O_HIN0738 | 634 | U01376_4 | 2204 | FTSH_BACSU | 1208 | CAATPASE_1 | 1091 | ATP-dependent Zn-dependent |
| H_HIN0739 | 381 | FTSH_ECOLI | 1504 | SYCSIRB_118 | 474 | YME1_YEAST | 716 | truncated ATPase, partial di |
| G_HIN0740 | 275 | ECOW67_105 | 743 | DHPS_CIOAB | 294 | S47154 | 142 | dihydropteroate synthase |
| S_HIN0741 | 445 | MRSA_ECOLI | 1528 | U00020_23 | 405 | SOPGM_1 | 95 | phosphomannomutase |
| R_HIN0742 | 164 | - | - | - | - | - | - | - |
| R_HIN0743 | 129 | S16259 | 162 | YTXH_BACSU | 84 | S16259 | 162 | membrane protein |
| R_HIN0744 | 441 | ECU29581_8 | 470 | - | - | - | - | outer membrane protein |
| S_HIN0745 | 203 | - | - | - | - | - | - | - |
| R_HIN0746 | 238 | ECU29581_24 | 298 | U00013_6 | 232 | NFS1_YEAST | 125 | aminotransferase |
| R_HIN0747 | 429 | YUJK_ECOLI | 389 | S47441 | 356 | CEL42A10_5 | 173 | transport ATPase |
| E_HIN0748 | 379 | POTD_ECOLI | 786 | - | - | - | - | spermidine/putrescine-bindin |
| E_HIN0749 | 247 | POTC_ECOLI | 945 | MLU15180_37 | 188 | - | - | spermidine/putrescine perme |
| E_HIN0750 | 286 | POTB_ECOLI | 925 | CYST_SYNY3 | 132 | - | - | spermidine/putrescine perme |
| E_HIN0751 | 381 | POTA_ECOLI | 1210 | MLU15180_38 | 603 | MDR2_MOUSE | 144 | spermidine/putrescine transp |
| L_HIN0752 | 412 | PEPT_SALTY | 1094 | PEPT_IACLC | 358 | - | - | peptidase T |
| L_HIN0752 | 160 | BACMRGA_2 | 210 | BACMRGA_2 | 210 | - | - | DNA-binding protein |

| | | | | | | | | | | |
|---|---------|------|------|-------------|------|-------------|------|--------------|------|---------------------------------|
| F | HIN0753 | cdd | 292 | CDD_ECOLI | 429 | CDD_BACSU | 85 | CDD_HUMAN | 75 | cytidine deaminase |
| R | HIN0754 | | 321 | A47043 | 70 | MTU27357_1 | 69 | ODP1_YEAST | 70 | SAW-dependent methyltransferase |
| E | HIN0755 | putP | 504 | JC2382 | 795 | SAV06451_1 | 528 | DUR3_YEAST | 87 | sodium/proline symporter |
| M | HIN0756 | catA | 491 | ECOUW67_177 | 1726 | | | | | cytoplasmic axial filament |
| J | HIN0757 | glnS | 557 | ECGINS_1 | 1747 | SYOPSABGLT_ | 164 | SYQ_YEAST | 286 | glutaminyl-tRNA synthetase |
| S | HIN0758 | | 154 | | | | | | | |
| G | HIN0759 | malQ | 699 | ECOUW67_341 | 614 | CLOMALQP_1 | 110 | DPEP_SOLTU | 97 | amylomaltase |
| G | HIN0760 | glgB | 730 | GLGB_ECOLI | 2258 | S47569 | 1148 | S34039 | 430 | 1,4-alpha-glucan branching |
| G | HIN0761 | glgX | 659 | ECOUW67_356 | 748 | CDCPUIA_1 | 145 | ZMU18908_1 | 318 | isoamylase |
| G | HIN0762 | glgC | 444 | GLGC_ECOLI | 623 | MLU15180_20 | 246 | S37147 | 193 | glucose-1-phosphate adenyl |
| G | HIN0763 | glgA | 476 | ECOUW67_354 | 1484 | GLGA_BACSU | 215 | JQ2322 | 386 | glycogen synthase |
| G | HIN0764 | glgP | 821 | ECOUW67_353 | 2486 | PHSG_BACSU | 693 | PHS1_HUMAN | 1369 | alpha-glucan phosphorylase |
| C | HIN0765 | putA | 512 | PNTA_ECOLI | 1447 | DHA_BACSU | 138 | ENHPNT0_1 | 730 | NAD(P) transhydrogenase sub |
| C | HIN0766 | putB | 474 | PNTB_ECOLI | 800 | BACXTAB_2 | 59 | EIMET7B2A_1 | 636 | NAD(P) NAD(P) transhydrogen |
| R | HIN0767 | | 288 | ECOUW67_172 | 386 | YWFK_BACSU | 126 | | | transcriptional regulator |
| L | HIN0768 | topA | 868 | TOPI_ECOLI | 2257 | TOP1_BACSU | 458 | TOP3_YEAST | 102 | topoisomerase I |
| C | HIN0769 | acpD | 194 | ECOHRA_1 | 239 | | | | | acyl carrier protein phospho |
| J | HIN0770 | thrs | 643 | SYT_ECOLI | 2722 | SYT2_BACSU | 739 | SYTC_YEAST | 608 | threonyl-tRNA synthetase |
| E | HIN0771 | pqg | 926 | YDDC_ECOLI | 518 | BSU27560_1 | 97 | CEL28F5_5 | 72 | Zn-dependent protease |
| R | HIN0772 | yadB | 839 | YDDB_ECOLI | 182 | | | S34469 | 76 | receptor-like protein |
| H | HIN0773 | | 69 | MOP1_CLOPA | 168 | MOP1_CLOPA | 168 | | | molybdenum-pterin binding p |
| E | HIN0774 | ycck | 109 | S29376 | 84 | | | | | sulfite reductase gamma cha |
| S | HIN0775 | | 313 | ECOPYU01_1 | 134 | | | S51449 | 64 | new ACR |
| M | HIN0776 | kicB | 475 | KICB_ECOLI | 1067 | | | S11013 | 68 | killing factor |
| M | HIN0777 | kicA | 243 | S43912 | 643 | | | | | killing factor |
| M | HIN0778 | mukB | 1510 | D31701_1 | 2107 | M12_STRPY | 78 | S23647 | 108 | cell division ATPase, myosi |
| S | HIN0779 | | 302 | | | | | | | |
| R | HIN0780 | | 291 | BAU09185_2 | 71 | | | EMECRNAA_1 | 68 | permease |
| L | HIN0781 | shcB | 473 | EX1_ECOLI | 1017 | | | | | exodeoxyribonuclease |
| P | HIN0782 | phoR | 425 | B44753 | 404 | RESE_BACSU | 204 | SLN1_YEAST | 107 | phosphate regulon sensor pr |
| P | HIN0783 | phoB | 231 | PHOB_ECOLI | 274 | MTU01971_1 | 235 | | | phosphate regulon transcrip |
| P | HIN0784 | pstB | 255 | PSTB_ECOLI | 1052 | BACORFA_5 | 763 | MDR3_CAEEL | 171 | phosphate transport ATPase |
| P | HIN0785 | pstA | 282 | PSTA_ECOLI | 717 | S42804 | 232 | A55689 | 76 | phosphate permease |
| P | HIN0786 | pstC | 315 | PSTC_ECOLI | 762 | MTPSTCIAB_1 | 439 | | | phosphate permease |
| P | HIN0787 | pstS | 258 | ECOUW82_92 | 506 | PAB_MYCTU | 183 | | | periplasmic phosphate-bindin |
| R | HIN0788 | rsgA | 182 | RSGA_ECOLI | 520 | RSGA_BACFR | 72 | FRI3_RANCA | 71 | ferritin-like protein |
| P | HIN0789 | | 165 | RSGA_ECOLI | 501 | RSGA_BACFR | 75 | PLRNAFFERR_1 | 80 | ferritin-like protein |
| S | HIN0790 | | 148 | | | | | | | |
| E | HIN0791 | trpE | 518 | TRPE_VIBPA | 1040 | TRPE_BRELA | 690 | RTAANTSYNB_ | 306 | anthranilate synthase compo |
| E | HIN0792 | trpG | 193 | STYTRPD_2 | 609 | TRPG_THETH | 274 | HPMOXG_3 | 207 | anthranilate synthase compo |
| M | HIN0793 | | 129 | LYC_RABIT | 46 | | | LYC_RABIT | 46 | lysozyme |
| E | HIN0794 | trpD | 333 | TRPD_VIBPA | 823 | TRPD_CORGL | 387 | TRPD_YEAST | 94 | anthranilate phosphoribosyl |
| E | HIN0795 | trpC | 477 | ECU23499_1 | 585 | TRPC_BRELA | 384 | TRPC_PHACH | 204 | anthranilate isomerase |
| C | HIN0796 | hybG | 91 | HYBG_ECOLI | 266 | | | | | hydrogenase expression fact |
| J | HIN0797 | vals | 954 | SYV_ECOLI | 2791 | SYV_BACST | 365 | SYV_YEAST | 517 | valyl-tRNA synthetase |
| L | HIN0798 | | 309 | A24372 | 133 | A24372 | 133 | | | HindIII modification methyl |
| L | HIN0799 | | 300 | | | | | | | restricase |
| S | HIN0800 | yqfB | 123 | ECU28375_50 | 367 | | | | | |

| | | | | | | | | | |
|---|---------|-----|-------------|------|-------------|------|-------------|-----------------------------|---|
| R | HIN0801 | 140 | MDL_ECOLI | 58 | S49597 | 44 | - | ATP-utilizing enzyme | |
| L | HIN0802 | 144 | HOLC_ECOLI | 361 | - | - | - | DNA polymerase III, chi sub | |
| C | HIN0803 | 464 | FUMH_RAT | 1369 | FUMH_BACSU | 1028 | ARLY_YEAST | 97 | funarase |
| S | HIN0804 | 202 | - | - | - | - | - | - | - |
| L | HIN0805 | 274 | DP3A_BACSU | 85 | DP3A_BACSU | 85 | - | - | 5'-3' exonuclease |
| F | HIN0806 | 339 | PYRD_SALTY | 1008 | U00017_41 | 321 | PYRD_DROME | 315 | dihydroorotate dehydrogenase |
| S | HIN0807 | 68 | - | - | - | - | - | - | - |
| R | HIN0808 | 182 | S18685 | 118 | - | - | - | - | Sc/SvM1 protein (plasmid p1) |
| S | HIN0809 | 366 | - | - | - | - | - | - | - |
| S | HIN0810 | 118 | - | - | - | - | - | - | - |
| R | HIN0811 | 447 | RP4TRANOKF | 319 | - | - | - | - | tran protein (plasmid) |
| S | HIN0812 | 436 | - | - | - | - | - | - | - |
| S | HIN0813 | 139 | - | - | - | - | - | - | - |
| R | HIN0814 | 394 | - | - | - | - | - | - | - |
| R | HIN0815 | 171 | LIHOF168A_1 | 63 | - | - | - | - | terminase large subunit ? |
| R | HIN0816 | 173 | YG15_BBP22 | 171 | - | - | - | - | terminase small subunit |
| R | HIN0817 | 93 | PRDIX11 | 108 | - | - | - | - | bacteriophage protein |
| S | HIN0818 | 91 | - | - | - | - | - | - | bacteriophage protein |
| R | HIN0819 | 200 | CHI1_ORYSA | 72 | - | - | CHI1_ORYSA | 72 | chitinase |
| R | HIN0820 | 118 | VLY1_BBP22 | 73 | - | - | - | - | bacteriophage lysis protein |
| R | HIN0821 | 201 | BK5TATTP_13 | 202 | - | - | Y002_NPVAC | 90 | bacteriophage antirepressor |
| L | HIN0822 | 99 | TRC4_ECOLI | 73 | - | - | - | - | primase? |
| S | HIN0823 | 97 | - | - | - | - | - | - | - |
| S | HIN0824 | 191 | H1U32821_7 | 101 | - | - | - | - | - |
| R | HIN0825 | 94 | pdb 1LCC | 59 | - | - | - | - | transcription regulator ? |
| L | HIN0826 | 304 | G45252 | 125 | INTR_STRAM | 57 | EUPTEC11X_2 | 63 | site-specific recombinase |
| C | HIN0827 | 257 | FNR_ECOLI | 985 | NTCA_ANASP | 102 | - | - | funarate and nitrate reduct |
| S | HIN0828 | 340 | CBU10529_4 | 69 | YCRB_THETH | 68 | - | - | new BCR |
| S | HIN0829 | 278 | NGOTIA | 197 | - | - | - | - | - |
| F | HIN0830 | 212 | 1CDD | 586 | PUR3_BACSU | 325 | HUMPGFTA_1 | 412 | phosphoribosylglycinamide f |
| F | HIN0831 | 344 | PUR5_ECOLI | 882 | PUR5_BACSU | 512 | VUU30895_1 | 518 | phosphoribosylformylglycinal |
| R | HIN0832 | 252 | YDFG_ECOLI | 545 | HETN_ANASP | 144 | SC9959_8 | 225 | dehydrogenase |
| E | HIN0833 | 397 | ECU23494_2 | 1704 | SYCTRPB_1 | 956 | TRP1_MAIZE | 953 | tryptophan synthase, beta c] |
| E | HIN0834 | 268 | TRPA_VIBPA | 578 | TRPA_BRELA | 330 | TRP_NEUCR | 267 | tryptophan synthase alpha c] |
| E | HIN0835 | 317 | USG_ECOLI | 259 | DHAS_BACSU | 75 | - | - | dehydrogenase |
| R | HIN0836 | 158 | YBAK_SALTY | 503 | EBSC_ENTFA | 182 | - | - | transcription regulator ? |
| R | HIN0837 | 72 | CSPD_ECOLI | 247 | ARGCSP_1 | 161 | GRP2_NICSY | 136 | cold shock-like RNA-binding |
| S | HIN0838 | 53 | - | - | - | - | - | - | - |
| J | HIN0839 | 243 | ECU29581_5 | 536 | YPUL_BACSU | 70 | S50972 | 103 | pseudou synthetase |
| S | HIN0840 | 106 | ECU29581_6 | 161 | - | - | - | - | - |
| R | HIN0841 | 509 | MGU39722_3 | 110 | - | - | - | - | NTP-utilizing enzyme (GuaA : exodeoxyribonuclease VII sm |
| L | HIN0842 | 84 | EXTS_ECOLI | 222 | - | - | - | - | geranylgeranyltransfer |
| H | HIN0843 | 295 | ISPA_BACST | 384 | ISPA_BACST | 384 | GGPP_CAPAN | 361 | transketolase 1 |
| I | HIN0844 | 625 | YPUX_RHOC | 592 | MLU15181_22 | 460 | HUMBCKDH_1 | 104 | stringent starvation protei |
| R | HIN0845 | 150 | SSPB_ECOLI | 378 | - | - | - | - | stringent starvation protei |
| O | HIN0846 | 212 | RGECCS | 661 | - | - | DINGSTA_1 | 104 | stringent starvation protei |
| J | HIN0847 | 130 | ECUW67_159 | 566 | RS9_BACST | 330 | R61A_YEAST | 59 | 30S ribosomal protein S9 |
| J | HIN0848 | 142 | RL13_HAESO | 710 | RL13_STACA | 429 | R13A_YEAST | 48 | ribosomal protein L13 |

| | | | | | | | | | |
|---|---------|------|-----|------------|------|-------------|------------|-----|------------------------------|
| H | HIN0945 | yabF | 202 | DHOV_HUMAN | 156 | | DHOV_HUMAN | 156 | NAD(P)H:menadione oxidoredu |
| R | HIN0946 | ygjU | 414 | YGJU_ECOLI | 1203 | GLTT_BACST | BOVNSD_GAT | 127 | amino acid permease |
| L | HIN0947 | umud | 140 | SAMA_SALTY | 140 | | | | SOS mutagenesis protein, au |
| E | HIN0948 | arog | 362 | AROG_ECOLI | 926 | AROF_CORGL | AROG_YEAST | 736 | phospho-2-dehydro-3-deoxyhe |
| M | HIN0949 | | 416 | ZMDNAGR_3 | 250 | | | | membrane protein (FtsX para |
| R | HIN0950 | | 227 | BAU11045_1 | 547 | YXDL_BACSU | MDR1_PAT | 183 | transport ATPase |
| H | HIN0951 | | 191 | SMABIO_5 | 191 | BRLBIOAD_2 | COBQ_METVO | 58 | dethiobiotin synthetase (Bi |
| H | HIN0952 | bioc | 260 | BIOC_ECOLI | 57 | YAT1_SYNP6 | COQ3_YEAST | 54 | SAM-dependent methyltransfe |
| S | HIN0953 | | 215 | | | | | | |
| H | HIN0954 | bioF | 380 | XUECGA | 218 | BIOF_BACSH | HEMO_OPSTA | 167 | 8-amino-7-oxononanoate synt |
| H | HIN0955 | bioA | 430 | XNECDP | 1155 | U00010_25 | OAT_PLAFA | 199 | adenosylmethionine--8-amino |
| R | HIN0956 | | 393 | ZMDNAGR_3 | 174 | AMIC_STRPN | | | permease |
| R | HIN0957 | | 315 | SERA_BACSU | 234 | SERA_BACSU | FDH_NEUCR | 206 | dehydrogenase |
| S | HIN0958 | | 118 | | | | | | |
| M | HIN0959 | kdsA | 284 | ECU18555_9 | 1223 | AROG_BACSU | | 122 | oxy-D-manno-octulosonic aci |
| S | HIN0960 | ychA | 267 | ECU18555_8 | 218 | | | | |
| H | HIN0961 | hemK | 292 | ECU18555_6 | 325 | BSDNA320D_2 | COQ3_YEAST | 53 | adenyne-specific DNA methyl |
| S | HIN0962 | | 156 | | | | | | |
| S | HIN0963 | prfA | 361 | ECU18555_5 | 1432 | MLU15186_18 | YSCL8003_2 | 119 | peptide chain release facto |
| J | HIN0964 | | 52 | | | | | | |
| E | HIN0965 | | 178 | | | | | | |
| R | HIN0966 | | 990 | TB12_NEIME | 219 | P60_LISIN | S14548 | 99 | Zn metalloprotease |
| R | HIN0967 | | 138 | VPG_BPMU | 82 | | | | outer-membrane protein |
| S | HIN0968 | | 169 | | | | | | bacteriophage Mu protein |
| R | HIN0969 | | 366 | G45252 | 149 | | | | |
| C | HIN0970 | pykA | 478 | S29790 | 1846 | S27330 | S41379 | 475 | site-specific recombinase |
| L | HIN0971 | dnab | 504 | DNAB_SALTY | 726 | DNAC_BACSU | | | pyruvate kinase type II |
| E | HIN0972 | alr | 360 | ALR1_SALTY | 485 | ALR_BACST | | | replicative helicase |
| G | HIN0973 | pgi | 563 | ECOW89_72 | 1524 | CHTLTUA_1 | G6PI_PIG | 747 | alanine racemase |
| R | HIN0974 | yibD | 323 | NGU14554_5 | 296 | SPSA_BACSU | ALG5_YEAST | 57 | glucose-6-phosphate isomera |
| N | HIN0975 | | 155 | PCP_YEREN | 204 | | | | glycosyltransferase |
| S | HIN0976 | | 139 | | | | | | colicin |
| J | HIN0977 | args | 577 | SYR_ECOLI | 2184 | SYR_BRELA | SYR_CRILLO | 333 | arginyl-tRNA synthetase |
| E | HIN0978 | ilvH | 163 | S15940 | 567 | CORATA_3 | YCA9_YEAST | 187 | acetylactate synthase III si |
| E | HIN0979 | ilvI | 573 | ILVI_ECOLI | 1295 | A44857 | ILVB_PORUM | 736 | acetylactate synthase III 1; |
| R | HIN0980 | | 519 | HTU32790_7 | 88 | YWFA_BACSU | | | permease |
| L | HIN0981 | stpA | 134 | STPA_ECOLI | 306 | | RL22_HAIHA | 55 | DNA-binding protein |
| F | HIN0982 | purU | 278 | PURU_ECOLI | 1059 | CSU23955_6 | PUR2_HUMAN | 198 | formyltetrahydrofolate hydr |
| E | HIN0983 | aroA | 432 | PHU03068_1 | 1445 | AROA_BACSU | AROA_ARATH | 251 | 5-enolpyruvylshikimate-3-ph |
| L | HIN0984 | ycal | 446 | YSS2_COXBU | 1006 | BSDNAZX_1 | YN02_YEAST | 258 | ATPase (DNA replication) |
| S | HIN0985 | | 205 | YSS1_COXBU | 177 | | | | |
| R | HIN0986 | | 529 | SP3E_COXBU | 699 | SP3E_BACSU | BH5_MOUSE | 66 | ATPase |
| S | HIN0987 | | 223 | | | | | | |
| S | HIN0988 | | 107 | SP3E_COXBU | 87 | | | | |
| E | HIN0989 | lrp | 166 | LRP_SALTY | 624 | | | | leucine responsive regulato |
| O | HIN0990 | sms | 475 | SMS_ECOLI | 1699 | YACJ_BACSU | LONM_HUMAN | 99 | ATPase, ATP-dependent prote |
| S | HIN0991 | ygjF | 352 | YGIF_ECOLI | 187 | | | | |
| S | HIN0992 | | 238 | | | | | | |

| | | | | | | | |
|---|---------|-----|-------------|------|--------------|--------|-------------|
| S | HIN0993 | 317 | - | - | - | - | |
| S | HIN0994 | 95 | - | - | - | - | |
| S | HIN0995 | 151 | YQJF_ECOLI | - | - | - | |
| S | HIN0996 | 226 | - | - | - | - | |
| P | HIN0997 | 420 | RATRAM1A_1 | 428 | MLU15187_34 | 169 | RATRAM1A_1 |
| R | HIN0998 | 203 | YGIM_ECOLI | 272 | - | 152 | A46514 |
| J | HIN0999 | 416 | CCA_ECOLI | 893 | PAPS_BACSU | 66 | TNT_YEAST |
| H | HIN1000 | 209 | HEMM_SALTY | 239 | - | - | - |
| R | HIN1001 | 321 | YCHB_ECOLI | 663 | YABH_BACSU | 297 | OAT_VIGAC |
| F | HIN1002 | 315 | KIEBRT | 710 | JN0886 | 367 | S51270 |
| J | HIN1003 | 401 | SVY_THIFE | 882 | S16426 | 773 | YSCMSY1A_1 |
| G | HIN1004 | 238 | SFSA_ECOLI | 623 | - | - | - |
| R | HIN1005 | 464 | YDHE_ECOLI | 307 | - | 182 | YHJ2_YEAST |
| H | HIN1006 | 204 | RISA_ECOLI | 695 | RISA_BACSU | 144 | SCC10RF_4 |
| E | HIN1007 | 869 | AMPN_ECOLI | 2072 | S38364 | 504 | AMPE_MOUSE |
| F | HIN1008 | 164 | DEECPE | 621 | PUR6_BACSU | 185 | PUR6_SCHPO |
| F | HIN1009 | 362 | DCECPK | 478 | PURK_BACSU | 546316 | S46316 |
| E | HIN1010 | 396 | pdb 1AAM | 1329 | - | - | - |
| C | HIN1011 | 45 | HYPE_ECOLI | 146 | - | - | - |
| R | HIN1012 | 205 | PFU13043_1 | 192 | PFU13043_1 | 192 | GC20_YEAST |
| S | HIN1013 | 95 | - | - | - | - | - |
| S | HIN1014 | 167 | - | - | - | - | - |
| S | HIN1015 | 206 | - | - | - | - | - |
| S | HIN1016 | 161 | - | - | - | - | - |
| S | HIN1017 | 227 | - | - | - | - | - |
| R | HIN1018 | 177 | A32239 | 189 | MERR_BACSR | 185 | - |
| S | HIN1019 | 165 | S50869 | 101 | - | - | - |
| R | HIN1020 | 238 | POTB_ECOLI | 46 | GLPT_BACSU | 68 | - |
| R | HIN1021 | 116 | YABJ_BACSU | 92 | YABJ_BACSU | 92 | YIF1_YEAST |
| S | HIN1022 | 134 | ECOUW67_162 | 165 | - | - | - |
| R | HIN1023 | 212 | DEDA_ECOLI | 100 | U00011_31 | 91 | - |
| J | HIN1024 | 95 | RL25_ECOLI | 309 | CTC_BACCL | 71 | - |
| S | HIN1025 | 190 | - | - | - | - | - |
| E | HIN1026 | 121 | KIECD3 | 181 | AKAB_CORGL | 56 | MZEAKHD_1 |
| F | HIN1027 | 432 | ECOUW93_89 | 1769 | BAC180X_2 | 643 | PURA_DICTI |
| E | HIN1028 | 303 | DAPD_ACTPL | 1356 | E53402 | 78 | ATU30298_1 |
| F | HIN1029 | 349 | PURR_ECOLI | 481 | CLOREPA_1 | 267 | - |
| C | HIN1030 | 879 | CAPP_ECOLI | 1973 | U00013_25 | 309 | CAPP2_SORVU |
| R | HIN1031 | 470 | GBQ_LYMST | 45 | - | 1095 | GBQ_LYMST |
| E | HIN1032 | 565 | SAPA_SALTY | 369 | DPPE_BACSU | 125 | - |
| E | HIN1033 | 321 | SAPB_SALTY | 556 | DPPB_BACSU | 159 | YFEO_YEAST |
| E | HIN1034 | 295 | SAPC_SALTY | 658 | APPC_BACSU | 200 | - |
| E | HIN1035 | 349 | SAPD_SALTY | 1155 | APPD_BACSU | 292 | TAP1_HUMAN |
| E | HIN1036 | 269 | SAPF_SALTY | 673 | APPF_BACSU | 326 | CEDH11_3P |
| F | HIN1037 | 338 | YEIH_ECOLI | 876 | - | - | - |
| J | HIN1038 | 269 | TRUA_ECOLI | 975 | JT0612 | 284 | CEE02H1_2 |
| C | HIN1039 | 333 | F16P_ECOLI | 918 | NOSFTZCOOP_1 | 257 | F16P_WHEAT |
| F | HIN1040 | 222 | KCY_ECOLI | 605 | KCY_BACSU | 433 | KAD_CYPCA |

phosphate permease
myosin-like (coiled coil) p:
tRNA nucleotidyltransferase
5-aminolevulinate synthase
ATP-utililizing enzyme
ribose-phosphate pyrophosph
tyrosyl-tRNA synthetase
sugar fermentation stimulati
permease
riboflavin alpha subunit
aminopeptidase N
phosphoribosylaminoimidazol
phosphoribosylaminoimidazol
aspartate aminotransferase
hydrogenase (disrupted)
transport ATPase

transcription regulator
permease
dehydrogenase? new ACR

alkaline phosphatase-like, 1
50S ribosomal protein L25

aspartate kinase
adenylosuccinate synthetase
tetrahydrodipicolinate N-su
purine synthesis repressor
phosphoenolpyruvate carboxy

peptide transport periplasm
oligopeptide permease
dipeptide permease
transport ATPase
peptide transport ATPase
integral membrane protein
pseudou synthetase I
fructose-1,6-bisphosphatase
cytidylate kinase

| | | | | | | | | | |
|---|---------|-----|-------------|------|------------|-----|-------------|-----|------------------------------|
| E | HIN1041 | 291 | YAAD_BACSU | 931 | YAAD_BACSU | 931 | SC6543_3 | 630 | indole-3-glycerol-phosphate |
| E | HIN1042 | 175 | YAAE_BACSU | 235 | YAAE_BACSU | 235 | YFG0_YEAST | 68 | aminotransferase |
| C | HIN1043 | 564 | DEBCDL | 1266 | - | | DMU09506_1 | 63 | D-lactate dehydrogenase |
| L | HIN1044 | 36 | TIR1_ECOLI | 99 | - | | - | | fragment of hsdR protein (?) |
| S | HIN1045 | 92 | HIU32707 | 243 | - | | - | | |
| R | HIN1046 | 183 | NLPC_ECOLI | 179 | - | | - | | lipoprotein |
| R | HIN1047 | 484 | ECOUW67_173 | 821 | S05542 | 115 | - | | Zn protease |
| R | HIN1048 | 283 | ECOUW67_76 | 850 | S44956 | 79 | - | | methyltransferase? new ACR |
| S | HIN1049 | 575 | ECOUW67_77 | 252 | YABC_BACSU | 458 | YSCL9476_11 | 48 | |
| S | HIN1050 | 119 | ECOUW67_78 | 251 | - | | - | | |
| R | HIN1051 | 194 | ECOUW67_79 | 367 | - | | - | | phosphoheptose isomerase |
| H | HIN1052 | 193 | ECOUW67_80 | 481 | YGS2_ANACE | 65 | - | | hemolysin precursor? new BCI |
| F | HIN1053 | 781 | RIR1_ECOLI | 3299 | MSGRS0R_1 | 170 | PFU01323_1 | 149 | ribonucleoside-diphosphate : |
| F | HIN1054 | 376 | RDEC2R | 1687 | - | | A48687 | 116 | ribonucleoside-diphosphate : |
| C | HIN1055 | 409 | ODO2_ECOLI | 1071 | ODO2_BACSU | 535 | SC8358_5 | 737 | dihydrolipoamide succinyltr: |
| C | HIN1056 | 950 | ODO1_ECOLI | 2580 | ODO1_BACSU | 532 | ODO1_YEAST | 506 | 2-oxoglutarate dehydrogenas: |
| R | HIN1057 | 212 | U00011_3 | 156 | U00011_3 | 156 | - | | metal-utililizing enzyme (?) |
| S | HIN1058 | 259 | YUUV_ECOLI | 59 | YABD_BACSU | 45 | - | | new BCR |
| S | HIN1059 | 127 | - | | - | | - | | |
| S | HIN1060 | 489 | HSAS8B011 | 134 | - | | - | | |
| O | HIN1061 | 695 | A41798 | 622 | YPEB_SYNP2 | 114 | BOVIRBPB_1 | 83 | carboxy-terminal membrane p: |
| S | HIN1062 | 41 | yebJ | 90 | - | | - | | |
| S | HIN1063 | 157 | - | | - | | - | | |
| R | HIN1064 | 416 | PQIA_ECOLI | 238 | - | | - | | paraquat-inducible protein |
| R | HIN1065 | 881 | PQIB_ECOLI | 145 | - | | - | | paraquat-inducible protein j |
| H | HIN1066 | 150 | S31883 | 472 | - | | - | | molybdopterin converting f: |
| H | HIN1067 | 81 | MOAD_ECOLI | 267 | - | | - | | molybdopterin converting f: |
| H | HIN1068 | 160 | S31881 | 378 | - | | - | | molybdenum cofactor biosynt |
| H | HIN1069 | 337 | MOAA_ECOLI | 941 | ANMOAA_1 | 272 | ATCNX3MR_1 | 358 | molybdenum cofactor biosynt |
| S | HIN1070 | 223 | YTFE_ECOLI | 521 | - | | ATCNX2MR_1 | 565 | molybdenum cofactor biosynt |
| F | HIN1071 | 337 | YTFE_ECOLI | 666 | - | | - | | |
| S | HIN1072 | 180 | ECOUW67_126 | 206 | GLMS_BACSU | 109 | U00932_1 | 71 | hexose phosphate aminotrans: |
| S | HIN1073 | 718 | ECOUW67_282 | 241 | - | | - | | |
| S | HIN1074 | 221 | YOM2_PHOS9 | 96 | - | | - | | |
| E | HIN1075 | 353 | SOHB_ECOLI | 797 | - | | - | | periplasmic protease |
| C | HIN1076 | 192 | S39895 | 564 | RESC_BACSU | 59 | - | | membrane protein |
| C | HIN1077 | 193 | S39894 | 193 | S49997 | 81 | SC6652X_3 | 96 | ferredoxin |
| C | HIN1078 | 819 | S39893 | 268 | M24_STRPY | 110 | TRBR272P_1 | 227 | membrane protein, NADH:ubiq |
| C | HIN1079 | 358 | S39892 | 292 | - | | - | | membrane protein, NADH:ubiq |
| C | HIN1080 | 207 | S39906 | 284 | - | | - | | membrane protein, NADH:ubiq |
| C | HIN1081 | 235 | S39906 | 492 | - | | - | | membrane protein, NADH:ubiq |
| L | HIN1082 | 211 | LABK | 930 | END3_BACSU | 340 | YAB5_YEAST | 102 | endonuclease III |
| R | HIN1083 | 457 | S56968_1 | 195 | - | | S56968_1 | 195 | GABA transporter |
| P | HIN1084 | 351 | MODC_ECOLI | 759 | MSMK_STRMU | 232 | MDR2_MOUSE | 118 | molybdate transporter ATPase |
| P | HIN1085 | 229 | MODB_ECOLI | 781 | CYSW_SYNP7 | 205 | - | | molybdate permease |
| P | HIN1086 | 254 | MODA_ECOLI | 417 | BACORFA_4 | 69 | - | | molybdate-binding periplasm: |
| P | HIN1087 | 255 | MODA_AZOVI | 203 | - | | - | | molybdate-binding protein |
| R | HIN1088 | 267 | EAAWASL_8 | 487 | YWDF_BACSU | 74 | - | | glycosyl transferase |

| | | | | | | | | | |
|---|---------|------|-------------|------|------------|------|-------------|-----|-------------------------------|
| R | HIN1089 | 294 | YWDF_BACSU | 109 | YWDF_BACSU | 109 | BOVUDPg_1 | 67 | glycosyl transferase |
| M | HIN1090 | 257 | HIV05670_2 | 66 | - | - | - | 67 | lipopolysaccharide synthetase |
| M | HIN1091 | 353 | S51263 | 297 | TAGE_BACSU | 187 | PIGA_HUMAN | 79 | UDP-D-galactose:(glucosyl)1: |
| S | HIN1092 | 304 | - | - | - | - | - | - | - |
| M | HIN1093 | 404 | S30030 | 88 | - | - | PEM1_YEAST | 46 | lipopolysaccharide biosynth |
| S | HIN1094 | 247 | YCBC_ECOLI | 58 | - | - | - | - | - |
| E | HIN1095 | 756 | AA42863 | 1261 | - | - | CRMETS_1 | 931 | 5-methyltetrahydrofolate-h |
| R | HIN1096 | 358 | YJGQ_ECOLI | 570 | - | - | - | - | permease |
| R | HIN1097 | 372 | YJGP_ECOLI | 934 | - | - | - | - | permease |
| E | HIN1098 | 491 | AMPA_ECOLI | 1035 | - | - | - | - | leucyl aminopeptidase |
| H | HIN1099 | 669 | BETT_ECOLI | 1035 | MYCAMINO_1 | 253 | AMPL_ARATH | 359 | high affinity choline perme |
| R | HIN1100 | 451 | ECU28377_12 | 787 | YACL_BACSU | 59 | - | - | histidine kinase, sensor |
| R | HIN1101 | 221 | ECU28377_12 | 689 | U00018_36 | 101 | - | - | transcription regulator, re |
| R | HIN1102 | 121 | ECU28377_12 | 161 | RCAC_FREDI | 339 | SKN7_YEAST | 139 | two-component system? frame |
| S | HIN1103 | 46 | APCLTY | 79 | - | - | - | - | - |
| G | HIN1104 | 166 | WOECP3 | 584 | S46952 | 357 | S74697_1 | 260 | phosphotransferase system ei |
| G | HIN1105 | 575 | PTI_SALTY | 2087 | PTI_BACST | 1359 | FTPDKG_2 | 116 | phosphoenolpyruvate-protein |
| G | HIN1106 | 85 | pdb1POH | 326 | S37585 | 154 | - | - | phosphotransferase phosphoc |
| R | HIN1107 | 346 | YJEO_ECOLI | 427 | ATPB_BACST | 86 | CEL34E10_1 | 82 | GTPase |
| S | HIN1108 | 182 | YJER_ECOLI | 715 | - | - | - | - | - |
| M | HIN1109 | 355 | S30678 | 524 | MRAY_BACSU | 131 | GPT_MOUSE | 63 | undecaprenyl-phosphate alph |
| S | HIN1110 | 261 | - | - | - | - | - | - | - |
| E | HIN1111 | 863 | S36254 | 831 | - | - | - | - | PII uridylyl-transferase |
| R | HIN1112 | 188 | NGOFUSAA_4 | 173 | LJU09558_1 | 115 | - | - | IS-150 insertion element pr |
| R | HIN1113 | 216 | A33595 | 395 | A33595 | 395 | - | - | IS-150 insertion element pr |
| J | HIN1114 | 268 | S12027 | 499 | AMPM_BACSU | 347 | YSC19672_5 | 389 | methionine aminopeptidase |
| R | HIN1115 | 114 | YADR_ECOLI | 504 | S49995 | 184 | SC9499X_22 | 105 | new ACR, nitrogen fixation |
| S | HIN1116 | 117 | YACL | 120 | - | - | - | - | - |
| M | HIN1117 | 781 | S45218 | 709 | PBPA_BACSU | 252 | - | - | penicillin-binding protein, |
| E | HIN1118 | 306 | JC2039 | 452 | PUR7_STREN | 67 | JC2039 | 452 | SALCAR synthetase |
| E | HIN1119 | 444 | ECOWW67_101 | 1665 | JN0506 | 1559 | ASSY_BOVIN | 149 | argininosuccinate synthase |
| R | HIN1120 | 397 | YCSH_BACSU | 495 | MLU15184_8 | 59 | - | - | branched-chain amino acid c |
| R | HIN1121 | 245 | YCSF_BACSU | 314 | - | - | - | - | lactam utilization protein |
| R | HIN1122 | 522 | YSCUAMD_1 | 190 | YCSJ_BACSU | 133 | LAMB_EMENTI | 246 | (urea ?) amidolyase |
| M | HIN1123 | 1020 | HIV32846_1 | 171 | - | - | - | - | adhesin |
| N | HIN1124 | 298 | AIDA_ECOLI | 88 | - | - | - | - | adhesin |
| L | HIN1125 | 659 | RNB_ECOLI | 529 | YH11_LACIA | 75 | DIS3_SCHPO | 97 | exoribonuclease II |
| I | HIN1126 | 295 | FABI_ECOLI | 978 | YNT3_ANASP | 411 | FABI_BRANA | 160 | enoyl-lacyl-carrier-protein |
| J | HIN1127 | 527 | RF3_ECOLI | 2387 | EFG_SPIPL | 233 | S44896 | 151 | peptide chain release facto |
| S | HIN1128 | 77 | - | - | - | - | - | - | - |
| S | HIN1129 | 109 | - | - | - | - | - | - | - |
| S | HIN1130 | 244 | - | - | - | - | - | - | - |
| E | HIN1131 | 309 | METR_ECOLI | 326 | ALSR_BACSU | 160 | S43767 | 67 | transcriptional activator o |
| C | HIN1132 | 381 | LIDD_ECOLI | 1534 | AEU12219_1 | 265 | S33322 | 323 | L-lactate dehydrogenase (cy |
| E | HIN1133 | 269 | ECOWW89_26 | 505 | LBAGR_1 | 165 | - | - | glutamate racemase |
| L | HIN1134 | 693 | RECG_ECOLI | 2376 | MPD_BACSU | 313 | S30805 | 93 | DNA recombinase, helicase |
| F | HIN1135 | 677 | SPOT_ECOLI | 1254 | S39975 | 764 | - | - | ppGpp 3' pyrophosphohydroly |
| L | HIN1136 | 88 | RPOZ_ECOLI | 279 | - | - | - | - | DNA-directed RNA polymerase |

| | | | | | | | | | | |
|---|---------|------|------|-------------|------|-------------|------|-------------|-----|------------------------------|
| F | HIN1137 | gnk | 208 | KGUA_ECOLI | 434 | MHU02537_2 | 57 | KIBYGU | 177 | guanylate kinase |
| C | HIN1138 | gapA | 143 | G3P_ESCFE | 302 | S6803GAP1_1 | 248 | GBIGLYADEH | 298 | glyceraldehyde-3-phosphate |
| I | HIN1139 | | 607 | SC9408_8 | 204 | BSU26444_3 | 136 | SC9408_8 | 204 | long-chain-fatty-acid CoA 1: |
| R | HIN1140 | yidA | 262 | YIDA_ECOLI | 198 | YPDA_BACST | 159 | ATCB_DROME | 77 | hydrolyase |
| R | HIN1141 | | 154 | U00016_19 | 130 | U00016_19 | 130 | - | - | metal-binding protein (?) |
| C | HIN1142 | fdhd | 270 | FDHD_ECOLI | 515 | NARQ_BACSU | 123 | - | - | formate dehydrogenase forma |
| C | HIN1143 | fdng | 1028 | FDNG_ECOLI | 1742 | NASC_BACSU | 164 | PDHA_METFO | 228 | formate dehydrogenase, nitri |
| C | HIN1144 | fdnh | 312 | FDNH_ECOLI | 972 | NARH_BACSU | 161 | FER_METBA | 76 | formate dehydrogenase |
| C | HIN1145 | fdnt | 233 | FDNI_ECOLI | 460 | - | - | - | - | formate dehydrogenase, nitri |
| C | HIN1146 | fdhe | 302 | FDHE_ECOLI | 678 | - | - | - | - | formate dehydrogenase forma |
| J | HIN1147 | rim1 | 155 | RIMI_ECOLI | 327 | - | - | - | - | ribosomal-protein-alanine a |
| L | HIN1148 | hold | 134 | HOLD_ECOLI | 112 | STA_STRLA | 73 | YFB7_YEAST | 60 | DNA polymerase III, psi sub |
| R | HIN1149 | yjtT | 330 | YJT_ECOLI | 495 | SARPLRPO_2 | 91 | HSHTOMT9_3 | 74 | SAM-dependent methyltransfe |
| R | HIN1150 | era | 302 | ERA_ECOLI | 1203 | BEX_BACSU | 387 | MSS1_YEAST | 120 | GTP-binding protein |
| L | HIN1151 | rnc | 227 | RNC_ECOLI | 661 | MC235_1 | 105 | PAC1_SCHPO | 155 | ribo-nuclease III |
| N | HIN1152 | lepB | 349 | LEPB_ECOLI | 439 | LEPC_BACCL | 87 | IMP1_YEAST | 74 | signal peptidase I |
| N | HIN1153 | lepA | 598 | LEPA_ECOLI | 1524 | U00016_9 | 1381 | YO81_CAEEL | 492 | membrane GTPase |
| R | HIN1154 | yfid | 127 | YFID_ECOLI | 543 | - | - | - | - | putative mobile protein hom |
| L | HIN1155 | ung | 219 | DGECU | 827 | UNG_BACSU | 380 | UNG1_HUMAN | 615 | uracil-DNA glycosylase |
| R | HIN1156 | | 474 | S49379 | 1521 | U00019_14 | 384 | CEL25B5_2 | 249 | oxidoreductase (sulfur-iron |
| R | HIN1157 | yglE | 479 | ECU28379_10 | 301 | SOU13238_1 | 205 | - | - | 2-oxoglutarate/malate trans |
| R | HIN1158 | | 416 | KPCITCDEF_5 | 265 | - | - | - | - | citrate metabolism operon i |
| I | HIN1159 | | 500 | KPCITCDEF_4 | 1756 | - | - | - | - | citrate lyase alpha-subunit |
| I | HIN1160 | | 291 | CTIB_KLEPN | 540 | - | - | - | - | citrate lyase beta-subunit |
| S | HIN1161 | | 95 | KPCITCDEF_2 | 178 | - | - | - | - | acetate:SH-citrate lyase li |
| I | HIN1162 | l1pA | 335 | KPCITCDEF_1 | 686 | - | - | - | - | lipic acid synthase |
| H | HIN1163 | l1pB | 320 | L1PA_ECOLI | 1184 | S19702 | 62 | L1P5_YEAST | 373 | lipoate protein ligase B |
| H | HIN1164 | | 212 | L1PB_ECOLI | 352 | - | - | S51458 | 125 | |
| S | HIN1165 | ybed | 92 | YBED_ECOLI | 211 | - | - | - | - | |
| M | HIN1166 | daca | 393 | DACA_ECOLI | 467 | DACF_BACSU | 208 | - | - | D-alanyl-D-alanine carboxyp |
| M | HIN1167 | rlpA | 287 | RLPA_ECOLI | 202 | - | - | - | - | rare lipoprotein A |
| M | HIN1168 | mrda | 371 | RODA_ECOLI | 1212 | SP5E_BACSU | 231 | - | - | rod shape determining prote |
| M | HIN1169 | mrda | 651 | PBP2_ECOLI | 1853 | A36903 | 215 | - | - | penicillin-binding protein, |
| S | HIN1170 | ybeA | 155 | YBEA_ECOLI | 703 | - | - | - | - | |
| S | HIN1171 | ybeb | 102 | YBEB_ECOLI | 231 | - | - | - | - | |
| G | HIN1172 | yidE | 551 | ECOUW82_50 | 1283 | - | - | YM62_CAEEL | 77 | new ACR |
| R | HIN1173 | | 592 | YDDA_ECOLI | 167 | COMA_STRPN | 110 | CELCA4B7_7 | 132 | PTS system IIC component |
| O | HIN1174 | mrEB | 378 | ECOUW67_181 | 959 | MREB_BACSU | 381 | PFGPAA_1 | 119 | transport ATPase |
| M | HIN1175 | mrEC | 351 | MREC_ECOLI | 771 | BACDIVREG_4 | 99 | - | - | rod shape determining prote |
| M | HIN1176 | mrED | 162 | MRED_ECOLI | 361 | MRED_BACSU | 86 | - | - | rod shape determining prote |
| S | HIN1177 | | 258 | YUGD_ECOLI | 63 | - | - | - | - | |
| L | HIN1178 | xthA | 267 | EX3_ECOLI | 1050 | EXOA_BACSU | 134 | DDU31631_1 | 95 | exodeoxyribonuclease III |
| J | HIN1179 | | 224 | YFII_ECOLI | 121 | MGU02214_1 | 76 | SPAC18B11_2 | 99 | pseudou synthetase |
| S | HIN1180 | ycjF | 354 | ycjF | 139 | - | - | - | - | |
| R | HIN1181 | ycCA | 220 | YCCA_ECOLI | 696 | ARSB_STAUV | 51 | DRONMDA_1 | 82 | permease |
| R | HIN1182 | ytfJ | 184 | YTFJ_ECOLI | 374 | - | - | - | - | transcription regulator |
| P | HIN1183 | phnA | 120 | PHNA_ECOLI | 273 | PHNA_STRMU | 130 | - | - | alkylphosphonate uptake pro |
| C | HIN1184 | eda | 212 | ALKH_ERWCH | 415 | - | - | - | - | 4-hydroxy-2-oxoglutarate al |

| | | | | | | | | | | |
|---|---------|-------|-----|-------------|------|-------------|------|--------------|-----|------------------------------|
| C | HIN1185 | hdha | 285 | NOSHRMA_1 | 156 | NOSHRMA_1 | 156 | A48674 | 116 | 7-alpha-hydroxysteroid dehy |
| G | HIN1186 | yhjI | 314 | C55215 | 506 | RBSK_BACSU | 85 | SCRK_SOLTU | 87 | 2-dehydro-3-deoxygluconokin |
| R | HIN1187 | | 427 | YIAN_ECOLI | 617 | - | | - | | permease |
| R | HIN1188 | | 165 | YIAM_ECOLI | 152 | JN0768 | 69 | DDRNAPAT1_1 | 70 | integral membrane protein |
| R | HIN1189 | | 328 | DCTP_RHOCA | 238 | - | | - | | periplasmic binding protein |
| C | HIN1190 | | 342 | RSPB_ECOLI | 263 | A45052 | 145 | DHSO_SCHPO | 154 | dehydrogenase |
| G | HIN1191 | uxuR | 266 | UXUR_ECOLI | 304 | S33420 | 116 | - | | uxu operon regulator |
| G | HIN1192 | uxuA | 394 | UXUA_ECOLI | 1579 | - | | - | | mannonate hydrolase |
| R | HIN1193 | ygdc | 237 | KPNCP5_2 | 384 | - | | - | | membrane protein |
| L | HIN1194 | uvrc | 609 | UVRC_ECOLI | 1168 | UVRC_BACSU | 283 | ERCL_MOUSE | 85 | excinuclease subun |
| M | HIN1195 | kdsB | 254 | A26322 | 595 | CTU15192_1 | 159 | YSCTA60A_1 | 79 | 3-deoxy-manno-oculosonate |
| R | HIN1196 | ycasH | 332 | YCAH_ECOLI | 380 | SPU16156_2 | 69 | - | | ATP-utilizing enzyme |
| R | HIN1197 | msbA | 587 | MSBA_ECOLI | 1065 | SAU29478_1 | 582 | PMD1_SCHPO | 523 | transport ATPase |
| R | HIN1198 | ycal | 788 | CME3_BACSU | 152 | CME3_BACSU | 152 | - | | integral membr. protein new |
| O | HIN1199 | dkSA | 145 | DKSA_ECOLI | 575 | YZWB_BACSU | 106 | - | | dosage-dependent dnak suppr |
| L | HIN1200 | pcnB | 452 | PCNB_ECOLI | 1015 | PAPS_BACSU | 161 | TNT_YEAST | 82 | poly(A) polymerase |
| H | HIN1201 | folk | 160 | HPPK_BACSU | 283 | HPPK_BACSU | 283 | FAS_PNECA | 248 | 2-amino-4-hydroxy-6-hydroxy |
| R | HIN1202 | yjee | 158 | YJEE_ECOLI | 415 | U00020_7 | 98 | YPT7_YEAST | 41 | ATP-utilizing enzyme |
| M | HIN1203 | ambB | 432 | AMIB_ECOLI | 347 | CWLB_BACSU | 328 | HSHMLH1_1 | 453 | N-acetylmutamoyl-L-alanine |
| L | HIN1204 | mutL | 629 | MUTL_SALTY | 964 | HEXB_STRPN | 177 | MOD5_YEAST | 255 | DNA mismatch repair protein |
| J | HIN1205 | miaA | 311 | MIAA_ECOLI | 1094 | U00019_10 | | - | | glutamate-ammonia-ligase ad |
| E | HIN1206 | glne | 981 | GLNE_ECOLI | 724 | - | 297 | A46475 | 249 | DNA repair protein, ATPase |
| L | HIN1207 | recN | 558 | RECN_ECOLI | 970 | RECN_BACSU | 199 | YEF1_YEAST | 212 | ATP-utilizing enzyme, kinase |
| R | HIN1208 | yfjB | 285 | YFJB_ECOLI | 305 | U00021_19 | 177 | GRPE_YEAST | 130 | heat shock protein |
| O | HIN1209 | grpE | 234 | GRPE_ECOLI | 192 | S08418 | 58 | S51882 | 64 | adenyllyltransferase |
| R | HIN1210 | | 114 | S51882 | 64 | A61153 | | - | | |
| S | HIN1211 | | 146 | - | | - | | - | | |
| F | HIN1212 | nrdD | 707 | ECOUW93_151 | 1469 | - | | - | | anaerobic ribonucleotide re |
| R | HIN1213 | tesB | 286 | ECOTESB_1 | 789 | - | | YMEP_YEAST | 133 | thioesterase |
| S | HIN1214 | | 288 | - | | - | | - | | |
| J | HIN1215 | cysS | 459 | SYC_ECOLI | 1707 | SYC_BACSU | 567 | HUMCYSTRNA_1 | 273 | cysteinyI-tRNA synthetase |
| O | HIN1216 | pplB | 169 | CYPB_ECOLI | 450 | CYPH_SYNP7 | 120 | CEF59E10_1 | 153 | peptidyl-prolyl cis-trans is |
| S | HIN1217 | | 143 | S73874 | 169 | - | | - | | |
| S | HIN1218 | yjiv | 262 | XJUV_ECOLI | 447 | YABD_BACSU | 160 | YBF5_YEAST | 78 | new ACR |
| S | HIN1219 | | 88 | - | | - | | - | | |
| S | HIN1220 | | 71 | - | | - | | - | | |
| O | HIN1221 | trxA | 107 | A32956 | 341 | ANATRXA_1 | 337 | THIO_EMENT | 98 | thioredoxin |
| C | HIN1222 | yiaE | 331 | PBU17055_53 | 551 | PADLDH_3 | 536 | YIH4_YEAST | 184 | dehydrogenase |
| E | HIN1223 | | 381 | MLU15183_6 | 533 | MLU15183_6 | 533 | ATHCBL_1 | 414 | cystathionine gamma-synthas |
| E | HIN1224 | thrc | 425 | THRC_SERMA | 1368 | THRC_CORGL | 230 | S49036 | 139 | threonine synthase |
| E | HIN1225 | thrb | 314 | KHSE_SERMA | 804 | KHSE_FREDI | 174 | KHSE_YEAST | 73 | homoserine kinase |
| E | HIN1226 | thra | 815 | AKIH_SERMA | 2563 | AK2_BACSU | 276 | AK_YEAST | 225 | aspartokinase/homoserine de |
| S | HIN1227 | ygss | 237 | ECU28377_49 | 365 | - | | YBD6_YEAST | 104 | new ACR |
| S | HIN1228 | yhad | 378 | YXAA_BACSU | 1107 | YXAA_BACSU | 1107 | - | | new BCR |
| R | HIN1229 | | 419 | ECU29579_37 | 106 | YXJC_BACSU | 96 | B44805 | 79 | permease |
| S | HIN1230 | yaeg | 368 | YAEg_ECOLI | 187 | S39972 | 93 | - | | |
| R | HIN1231 | | 106 | AFAGBD_3 | 205 | GNTTP_BACSU | 64 | - | | membrane protein |
| R | HIN1232 | | 56 | ECU29579_32 | 111 | - | | - | | transcription regulator (on |

| | | | | | | | | | |
|---|---------|-----|-------------|--------|-------------|-----|-------------|-----|--|
| R | HIN1233 | 251 | ECPMC7A_4 | 124 | U00015_16 | 91 | SCPDR4_1 | 108 | SAM-dependent methyltransferase |
| S | HIN1234 | 191 | - | - | - | - | - | - | - |
| P | HIN1235 | 294 | NM4446FBP_1 | 1029 | - | - | - | - | periplasmic iron-binding protein |
| P | HIN1236 | 473 | SFUB_SERMA | 444 | CYST SYNPT7 | 114 | - | - | iron permease |
| E | HIN1237 | 356 | POTA_ECOLI | 373 | MLU15180_38 | 322 | MDR2_CRIGR | 117 | transport ATPase |
| S | HIN1238 | 131 | - | - | - | - | - | - | - |
| S | HIN1239 | 146 | - | - | - | - | - | - | - |
| E | HIN1240 | 377 | DAPE_ECOLI | 1091 | S48588 | 110 | YB9X_YEAST | 101 | succinyl-diaminopimelate dehydrogenase |
| O | HIN1241 | 114 | YFEB_ECOLI | 246 | YRUB_CLOPA | 47 | - | - | glutaredoxin-like protein (glutathione reductase) |
| O | HIN1242 | 631 | HTPG_ECOLI | 1598 | BACGNTZ_27 | 332 | S49340 | 306 | chaperone, HS90 family |
| S | HIN1243 | 279 | CVNPBH_7 | 350 | LMU17284_3 | 82 | MTU19363_3 | 74 | new ACR |
| N | HIN1244 | 462 | SR54_ECOLI | 1848 | SR54_BACSU | 970 | SR5C_ARATH | 535 | signal recognition particle |
| R | HIN1245 | 403 | SHTLYCA_2 | 138 | SHTLYCA_2 | 138 | SNF4_YEAST | 69 | controls glucose repression |
| S | HIN1246 | 297 | YJUP_ECOLI | 427 | - | - | - | - | - |
| S | HIN1247 | 113 | - | - | - | - | - | - | - |
| J | HIN1248 | 429 | SYS_ECOLI | 919 | SYS_BACSU | 652 | YSBYC | 332 | seryl-tRNA synthetase |
| O | HIN1249 | 209 | S42468 | 123 | SYCPURT_3 | 61 | S42468 | 123 | glutathione S-transferase |
| R | HIN1250 | 98 | LJU09558_1 | 88 | LJU09558_1 | 88 | - | - | IS element |
| P | HIN1251 | 744 | NMU18558_1 | 113 | - | - | - | - | hemin receptor |
| L | HIN1252 | 545 | YWBD_BACSU | 122 | YWBD_BACSU | 122 | YNL1_METTL | 61 | N6-adenine-specific DNA methylase |
| S | HIN1253 | 205 | - | - | - | - | - | - | - |
| M | HIN1254 | 270 | ECU29581_27 | 365 | CPVIRRS_1 | 63 | - | - | lytic transglycosylase mltA |
| R | HIN1255 | 261 | ECU29581_26 | 691 | HESA_ANASP | 138 | YKC7_YEAST | 163 | FAD/NAD-utilizing enzyme |
| F | HIN1256 | 337 | TPU16363_1 | 83 | TPU16363_1 | 83 | - | - | adhesin |
| R | HIN1257 | 168 | PGTP_SALTY | opt111 | - | - | - | - | membrane protein |
| M | HIN1258 | 453 | ECOW93_146 | 1721 | MURE_BACSU | 100 | - | - | acetylglucosaminyl-peptide ligase |
| E | HIN1259 | 396 | METC_ECOLI | 1395 | MLU15183_6 | 154 | METC_YEAST | 377 | cystathionine beta-lyase |
| I | HIN1260 | 185 | ECOPGSA_2 | 662 | BACPGSA_1 | 154 | PIS_YEAST | 77 | phosphatidylglycerophosphate phosphatase |
| G | HIN1261 | 176 | STPPAG_1 | 234 | MC383_1 | 101 | STPPAG_1 | 234 | inorganic pyrophosphatase |
| R | HIN1262 | 438 | YJCD_ECOLI | 840 | - | - | - | - | membrane protein |
| P | HIN1263 | 328 | YAGC_ECOLI | 857 | MLU15180_38 | 565 | TAP2_RAT | 113 | transport ATPase |
| E | HIN1264 | 550 | S42804 | 145 | S42804 | 145 | - | - | sulfate permease |
| P | HIN1265 | 346 | NM4446FBP_1 | 69 | RSBX_BACSU | 63 | - | - | iron-binding periplasmic protein |
| F | HIN1266 | 213 | URK_ECOLI | 738 | KPPR_SYNY3 | 120 | MUSURKI_1 | 203 | uridine kinase |
| F | HIN1267 | 195 | DCD_ECOLI | 774 | SCPAHCAS_4 | 57 | DCD_DESAM | 95 | deoxycytidine deaminase |
| S | HIN1268 | 391 | - | - | - | - | - | - | - |
| R | HIN1269 | 396 | YDEA_ECOLI | 356 | CMLR_STRLI | 209 | SC9582X_14 | 91 | permease |
| R | HIN1270 | 504 | U00021_5 | 336 | U00021_5 | 336 | MSS1_YEAST | 149 | GTPase, duplicated GTPase |
| L | HIN1271 | 256 | DP3E_ECOLI | 444 | DP3A_BACSU | 141 | - | - | DNA polymerase III epsilon |
| R | HIN1272 | 154 | RNH_SALTY | 554 | MSU20115_1 | 301 | CHEKSTFL25_ | 184 | Ribonuclease H |
| R | HIN1273 | 359 | S34263 | 86 | - | - | - | - | outer membrane protein |
| G | HIN1274 | 381 | NAGA_ECOLI | 592 | URE1_BACSB | 74 | NAGA_CAEEL | 96 | N-acetylglucosamine-6-phosphate glucosaminyl transferase |
| G | HIN1275 | 270 | NAGB_ECOLI | 1053 | MC068_1 | 178 | HUMORFKG1E_ | 829 | glucosamine-6-phosphate deaminase |
| M | HIN1276 | 293 | WZECN | 227 | DAPA_BREIA | 184 | PDPTDHS_1 | 92 | N-acetylneuraminate lyase |
| R | HIN1277 | 299 | YNGB_CLOPE | 285 | YNGB_CLOPE | 285 | GFAT_HUMAN | 78 | aminotransferase |
| G | HIN1278 | 300 | ECOW67_151 | 449 | - | - | - | - | sugar kinase |
| S | HIN1279 | 228 | ECOW67_152 | 669 | - | - | - | - | - |
| G | HIN1280 | 329 | YIAO_ECOLI | 266 | - | - | - | - | C4-dicarboxylate-binding protein |

| | | | | | | | | | | |
|---|---------|------|------|-------------|------|------------|-----|-------------|-----|------------------------------|
| R | HIN1329 | yjEP | 1111 | YJEP_ECOLI | 650 | - | - | - | - | coiled coil domain-containin |
| E | HIN1330 | arOC | 357 | AROC_VIBAN | 741 | AROC_SYNV3 | 524 | AROC_YEAST | 492 | chorismate synthase |
| M | HIN1331 | mePA | 286 | MEPA_ECOLI | 670 | - | 111 | - | - | murein endopeptidase |
| R | HIN1332 | yfCA | 255 | YFCA_ECOLI | 703 | U00011_29 | - | - | - | permease |
| M | HIN1333 | msdB | 318 | MSDB_ECOLI | 633 | - | - | - | - | multicopy suppressor of htrJ |
| H | HIN1334 | seld | 346 | SELD_ECOLI | 1224 | YDXA_BACSU | 59 | PUR2_CHICK | 73 | selenium metabolism protein |
| J | HIN1335 | rplS | 116 | S37176 | 530 | RL19_BACST | 329 | HUMORF04_1 | 93 | ribosomal protein L19 |
| J | HIN1336 | trmD | 246 | TRMD_SERMA | 1107 | - | - | - | - | tRNA (guanine-N1)-methyltra |
| S | HIN1337 | yfJA | 178 | YFJA_ECOLI | 660 | - | 168 | U33335_4 | 98 | 30S ribosomal protein S16 |
| J | HIN1338 | rpsP | 82 | RS16_ECOLI | 305 | RS16_BACSU | - | - | - | - |
| S | HIN1339 | - | 257 | - | - | - | - | - | - | - |
| F | HIN1340 | - | 603 | 5NTD_HUMAN | 151 | A47026 | 68 | 5NTD_HUMAN | 151 | 5'-nucleotidase |
| E | HIN1341 | arOK | 180 | ECOUW67_314 | 659 | BSAR01_1 | 154 | AR01_EMENT | 110 | shikimate kinase |
| E | HIN1342 | arOB | 362 | AROB_ECOLI | 1083 | AROB_MYCTU | 413 | AR01_EMENT | 335 | 3-dehydroquininate synthase |
| L | HIN1343 | dam | 286 | S47099 | 520 | LLU16027_1 | 156 | - | - | site-specific DNA-methyltra |
| I | HIN1344 | pGPB | 241 | PGPB_ECOLI | 210 | S32217 | 82 | - | - | phosphatidylglycerophosphat |
| H | HIN1345 | riBA | 224 | GCH2_ECOLI | 587 | GCH2_BACSU | 532 | PGGTPCHLS_1 | 298 | GTP cyclohydrolase II |
| R | HIN1346 | - | 514 | OPPA_SALTY | 220 | OPPA_BACSU | 171 | - | - | oligo-peptide binding prote |
| E | HIN1347 | prIC | 681 | OPDA_SALTY | 2531 | S49150 | 54 | PRTD_YEAST | 494 | oligopeptidase (Zn-dependen |
| L | HIN1348 | hsdM | 99 | TM1_ECOLI | 294 | MYCGLTX_5 | 75 | - | - | hsdM (pseudogene ?) |
| L | HIN1349 | - | 385 | S34396 | 148 | - | - | - | - | hdsd restriction endonuclea |
| S | HIN1350 | - | 176 | HIU32737_4 | 86 | - | - | - | - | - |
| L | HIN1351 | - | 1027 | TLR1_ECOLI | 2131 | MYCGLTX_4 | 197 | - | - | type I restriction enzyme R |
| R | HIN1352 | - | 213 | S68137_1 | 954 | - | - | - | - | - |
| S | HIN1353 | - | 237 | ECOUW67_139 | 188 | PBU17609_2 | 99 | SKN7_YEAST | 98 | transcription regulator, re |
| C | HIN1354 | arCB | 325 | ECOUW67_139 | 417 | A41860 | 117 | A48246 | 228 | aerobic respiration control |
| S | HIN1355 | - | 196 | - | - | - | - | - | - | - |
| H | HIN1356 | birA | 302 | pdb IBIA | 213 | BSU20445_1 | 117 | HUMBGCACL_1 | 73 | bifunctional protein: biotin |
| F | HIN1357 | guab | 488 | DEECIP | 2031 | SPU26056_1 | 796 | IMP2_HUMAN | 542 | IMP dehydrogenase |
| R | HIN1358 | - | 164 | IMP_ECOLI | 543 | SPU26056_1 | 247 | TRCIMPDH_1 | 112 | spliced N-terminus of GuaA |
| F | HIN1359 | guaA | 523 | GUAA_ECOLI | 1652 | GUAA_BACSU | 551 | S45481 | 589 | GMP synthetase |
| R | HIN1360 | - | 258 | RARD_ECOLI | 99 | YWFH_BACSU | 63 | - | - | membrane protein |
| R | HIN1361 | - | 172 | RARD_ECOLI | 101 | YWFH_BACSU | 57 | - | - | membrane protein |
| P | HIN1362 | - | 168 | S52279 | 205 | LACR_LACTA | 64 | - | - | transcription regulator |
| P | HIN1363 | nhaA | 400 | S40541 | 942 | - | - | - | - | Na+/H+ antiporter |
| E | HIN1364 | brnQ | 436 | BRPZ_PSEAE | 250 | LDBRNQGN_1 | 181 | - | - | branched chain amino acid t |
| S | HIN1365 | yhch | 155 | ECOUW67_150 | 146 | - | - | - | - | - |
| S | HIN1366 | - | 124 | - | - | - | - | - | - | - |
| L | HIN1367 | pnp | 709 | PNP_ECOLI | 2734 | SAU19858_1 | 488 | JC4026 | 159 | polynucleotide phosphorylas |
| O | HIN1368 | yhbM | 314 | YHBM_ECOLI | 616 | PQ0180 | 89 | HSU19721_1 | 92 | peroxisomal targeting signa |
| J | HIN1369 | dead | 613 | ECOUW67_92 | 1474 | YXIN_BACSU | 585 | YN21_CAEEL | 533 | RNA (?) helicase |
| F | HIN1370 | yfhd | 462 | YFHD_ECOLI | 886 | - | - | - | - | lytic transglycosylase |
| S | HIN1371 | yhdl | 69 | YHDL_ECOLI | 162 | - | - | - | - | - |
| P | HIN1372 | arsG | 116 | ARSC_ECOLI | 115 | YGL1_STRVR | 82 | - | - | arsenate reductase |
| R | HIN1373 | - | 349 | YHHT_ECOLI | 87 | YCT2_BACFI | 86 | SCMP48EGG_2 | 70 | permease |
| N | HIN1374 | secF | 325 | SECF_ECOLI | 585 | S52766 | 200 | - | - | protein-export membrane pro |
| N | HIN1375 | secD | 616 | SECD_ECOLI | 972 | SECD_MYCLE | 188 | - | - | protein-export membrane pro |
| S | HIN1376 | yaJC | 97 | YAJC_ECOLI | 217 | - | - | - | - | - |

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|---|---------|-----|-------------|------|------------|-----|-------------|-----|------------------------------|
| N | HIN1425 | 68 | ATU1_YEAST | 96 | EHCOPIYZ_3 | 60 | ATU1_YEAST | 96 | mercury scavenger protein |
| R | HIN1426 | 128 | MERR_BACSR | 188 | MERR_BACSR | 188 | - | - | transcription regulator |
| E | HIN1427 | 105 | A23081 | 474 | - | - | - | - | Met repressor |
| L | HIN1428 | 420 | RHO_ECOLI | 1816 | RHO_BOREU | 939 | - | - | transcription terminator, R |
| N | HIN1429 | 230 | ECU28377_70 | 171 | - | - | - | - | prepilin leader peptidase |
| N | HIN1430 | 406 | AHU20255_3 | 320 | CMG2_BACSU | 89 | - | - | transport protein |
| N | HIN1431 | 464 | AHU20255_2 | 782 | B30338 | 291 | - | - | transport protein (pillin bi |
| N | HIN1432 | 149 | PPDD_ECOLI | 210 | PPDA_CLOPE | 85 | - | - | prepilin |
| N | HIN1433 | 184 | AMPD_ECOLI | 462 | - | - | - | - | signalling protein |
| E | HIN1434 | 299 | SHTLYCA_2 | 234 | SHTLYCA_2 | 234 | YSCBS_1 | 90 | cystathionine beta-synthase |
| I | HIN1435 | 522 | INT_ECOLI | 567 | - | - | - | - | apolipoprotein N-acyltransi |
| F | HIN1436 | 245 | ECU28377_44 | 661 | U00016_17 | 98 | MUSURPH_1 | 64 | nucleosidase |
| S | HIN1437 | 186 | ECU28377_46 | 191 | - | - | - | - | |
| S | HIN1438 | 56 | - | - | - | - | - | - | |
| S | HIN1439 | 139 | ECU28377_47 | 501 | - | - | - | - | |
| S | HIN1440 | 302 | YAIID_ECOLI | 604 | - | - | - | - | |
| E | HIN1441 | 271 | VIBPROCV_3 | 607 | PROH_BACSU | 142 | PFU27806_1 | 125 | pyrroline-5-carboxylate red |
| R | HIN1442 | 388 | S49295 | 194 | YMBF_BACSU | 106 | YBL4_YEAST | 65 | permease |
| L | HIN1443 | 297 | XERD_ECOLI | 1081 | CODV_BACSU | 272 | - | - | integrase/recombinase |
| L | HIN1444 | 335 | RUVB_ECOLI | 1374 | RUVB_MYCLE | 921 | PFACDCATP_1 | 92 | Holliday junction DNA helic |
| L | HIN1445 | 204 | A32358 | 500 | RUVA_MYCLE | 193 | - | - | Holliday junction DNA helic |
| L | HIN1446 | 190 | D38113 | 631 | RUVC_MYCLE | 135 | - | - | Holliday junction DNA helic |
| S | HIN1447 | 246 | YEBC_ECOLI | 1004 | U00011_23 | 196 | - | - | |
| F | HIN1448 | 158 | NTPA_ECOLI | 378 | MUTT_STRAM | 78 | - | - | |
| J | HIN1449 | 588 | SYD_ECOLI | 2320 | SYD_MYCLE | 633 | SYDM_YEAST | 253 | dATP pyrophosphohydrolase |
| S | HIN1450 | 172 | SABAGBA | 158 | SABAGBA | 158 | - | - | aspartyl-tRNA synthetase |
| R | HIN1451 | 241 | CM4T_STRPE | 80 | CM4T_STRPE | 80 | YB9H_YEAST | 60 | methyltransferase |
| L | HIN1452 | 78 | C49205 | 84 | - | - | - | - | virulence plasmid protein |
| L | HIN1453 | 134 | B49205 | 129 | - | - | - | - | virulence-associated protei |
| R | HIN1454 | 135 | VPU06949_6 | 522 | YMBG_BACSU | 100 | SC9571X_14 | 138 | lactoylglyceral lyase |
| L | HIN1455 | 229 | RNT_ECOLI | 702 | MPU06833_1 | 94 | - | - | ribonuclease T |
| R | HIN1456 | 450 | VPU06949_1 | 390 | NHAC_BACFI | 80 | - | - | permease |
| J | HIN1457 | 188 | S34443 | 749 | ANAAACB_1 | 364 | HYPV_SULAC | 67 | elongation factor P |
| R | HIN1458 | 338 | YJEK_ECOLI | 863 | - | - | MTDNAMOA_2 | 42 | ferredoxin-like protein |
| S | HIN1459 | 431 | YTFB_ECOLI | 119 | - | - | - | - | |
| R | HIN1460 | 134 | - | - | - | - | - | - | |
| L | HIN1461 | 236 | RECO_ECOLI | 363 | YOXN_BACSU | 98 | - | - | opacity-associated membrane |
| J | HIN1462 | 438 | ECU29580_10 | 771 | KSGA_BACSU | 72 | RNCL_YEAST | 87 | DNA repair protein |
| J | HIN1463 | 743 | VSU13769_2 | 1239 | U00011_5 | 446 | - | - | SAM-dependent methyltransfe |
| I | HIN1464 | 118 | KIECDG | 274 | BSU29177_6 | 105 | - | - | ppGpp synthetase I |
| H | HIN1465 | 197 | MOG_ECOLI | 801 | S05373 | 60 | GEPH_RAT | 218 | diacylglycerol kinase |
| P | HIN1466 | 112 | GLNB_ECOLI | 476 | A39696 | 366 | MIORF_3 | 153 | molybdopterin biosynthesis] |
| R | HIN1467 | 348 | S47693 | 432 | YCT2_BACFI | 90 | - | - | nitrogen regulatory protein |
| L | HIN1468 | 730 | A35505 | 1475 | MFD_BACSU | 80 | HCA5_YEAST | 71 | permease |
| R | HIN1469 | 246 | ECU28377_58 | 688 | S44970 | 62 | - | - | primosomal helicase |
| S | HIN1470 | 114 | ECU28377_57 | 372 | - | - | - | - | SAM-dependent methyltransfe |
| C | HIN1471 | 113 | YOJG_ECOLI | 224 | - | - | - | - | |
| S | HIN1472 | 93 | YOJF_ECOLI | 170 | CAU15277_2 | 67 | FER_ENTHI | 58 | ferredoxin |

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|---|---------|------|-----|-------------|------|-------------|-----|-------------|------------------------------|
| C | HIN1473 | yojC | 819 | YOJC_ECOLI | 3307 | NARB_SYNP7 | 210 | - | nitrate reductase |
| C | HIN1474 | yojB | 279 | YOJB_ECOLI | 706 | S40170 | 70 | SC6652X_3 | ferredoxin-like protein |
| C | HIN1475 | yejZ | 287 | YEJZ_ECOLI | 832 | PHF1_CLOPA | 67 | FER_ENTHI | ferredoxin |
| C | HIN1476 | yejY | 150 | YEJY_ECOLI | 294 | - | - | - | cytochrome c |
| C | HIN1477 | yejX | 200 | YEJX_ECOLI | 468 | - | - | - | cytochrome c |
| F | HIN1478 | adk | 214 | KAD_SALTY | 830 | KAD_BACS5 | 353 | JQ1944 | Adenylate kinase |
| G | HIN1479 | ampG | 425 | AMPG_ECOLI | 349 | COMP_BACSU | 77 | CET26C5_3 | signal transducer (sensor) |
| M | HIN1480 | gale | 338 | GALE_ERWAM | 1151 | GALE_STRTR | 194 | GALE_RAT | UDP-glucose 4-epimerase |
| S | HIN1481 | | 231 | | | | | | |
| E | HIN1482 | | 240 | PROV_ECOLI | 175 | BACORFA_4 | 173 | MDR4_DROME | transport ATPase |
| R | HIN1483 | | 260 | YZEB_BACSU | 293 | YZEB_BACSU | 293 | NAH4_RAT | permease |
| H | HIN1484 | | 314 | NMT1_SCHPO | 197 | YZEA_BACSU | 68 | NMT1_SCHPO | pyrimidine (thiamine ?) pre |
| R | HIN1485 | | 215 | TENA_BACSU | 104 | TENA_BACSU | 104 | YCR0_YEAST | transcription activator |
| R | HIN1486 | | 271 | SYCMNTABC_3 | 762 | SYCMNTABC_3 | 762 | - | membrane protein |
| R | HIN1487 | | 282 | SYCMNTABC_3 | 648 | SYCMNTABC_3 | 648 | - | membrane protein |
| R | HIN1488 | | 306 | SYCMNTABC_2 | 773 | SYCMNTABC_2 | 773 | - | transport ATPase |
| R | HIN1489 | | 293 | SYCMNTABC_1 | 890 | SYCMNTABC_1 | 890 | ABC2_MOUSE | periplasmic-binding protein |
| M | HIN1490 | pbgG | 292 | PBP7_ECOLI | 220 | DACB_BACSU | 111 | - | penicillin-binding protein, |
| S | HIN1491 | yfgB | 390 | YFGB_ECOLI | 1540 | - | - | - | |
| S | HIN1492 | | 179 | CELK001D1F | 87 | - | - | CELK001D1F | new ACR |
| S | HIN1493 | yfgA | 303 | YFGA_ECOLI | 102 | - | - | - | |
| R | HIN1494 | gcpe | 368 | GCPE_ECOLI | 1533 | - | - | - | essential in E.coli |
| J | HIN1495 | hiss | 423 | SYECH | 1197 | SYH_STREQ | 476 | SC9367_13 | histidine--tRNA synthetase |
| S | HIN1496 | | 204 | CEA1_ECOLI | 79 | - | - | - | colicin |
| S | HIN1497 | yfhJ | 64 | YFHJ_ECOLI | 264 | - | - | - | |
| C | HIN1498 | fdx | 113 | JC1110 | 408 | THCC_RHOSO | 59 | ADX_CHICK | ferredoxin |
| O | HIN1499 | hsca | 619 | A53488 | 1074 | DNAK_CHLPN | 556 | GR78_SCHPO | chaperone |
| S | HIN1500 | ybfG | 228 | YBFG_ECOLI | 229 | - | - | - | |
| O | HIN1501 | yfhe | 174 | YFHE_ECOLI | 172 | - | - | - | |
| R | HIN1502 | yfhF | 107 | YFHF_ECOLI | 359 | S40168 | 196 | YJ01_YEAST | DnaJ-like chaperone |
| R | HIN1503 | | 151 | NIFU_KLEPN | 141 | NIFU_ANASP | 121 | SC9499X_22 | nitrogen fixation operon in |
| R | HIN1504 | yjeb | 406 | NFS1_YEAST | 1162 | NIFS_BACSU | 373 | NFS1_YEAST | NifU-related protein |
| S | HIN1505 | last | 150 | RPF2_DESVH | 194 | LACLPAGAP_2 | 92 | - | amino transferase |
| J | HIN1506 | pal | 241 | LAST_SERMA | 118 | YACO_BACSU | 65 | - | new BCR |
| M | HIN1507 | pal | 153 | PMU16849_1 | 561 | TRPTPSX_1 | 76 | - | rRNA methylase |
| M | HIN1508 | tolB | 427 | JV0058 | 732 | - | - | - | peptidoglycan-associated lip |
| M | HIN1509 | tolA | 372 | TOLA_ECOLI | 267 | - | - | - | oligogalacturonide lyase |
| M | HIN1510 | tolR | 139 | TOLR_ECOLI | 419 | - | - | - | outer membrane integrity pr |
| M | HIN1511 | tolQ | 228 | TOLQ_ECOLI | 795 | - | - | - | inner membrane protein |
| S | HIN1512 | ybgC | 136 | YBGC_ECOLI | 239 | - | - | - | biopolymer transport protein |
| L | HIN1513 | ding | 640 | DING_ECOLI | 175 | - | - | - | |
| M | HIN1514 | | 236 | YGUD_ECOLI | 143 | U00020_6 | 112 | YHSH_HAUMA | helicase |
| M | HIN1515 | slp | 183 | SLP_ECOLI | 112 | - | - | - | sialoglycoprotease |
| I | HIN1516 | fadD | 562 | LCFA_ECOLI | 1054 | S49518 | 175 | CELFF41C3_7 | outer membrane protein |
| L | HIN1517 | rnd | 399 | RND_ECOLI | 490 | MLU15181_26 | 92 | CEC14A4_4 | long-chain-fatty-acid-CoA l |
| S | HIN1518 | | 182 | - | - | - | - | - | ribonuclease D |
| R | HIN1519 | | 245 | PIC2_AGRPU | 76 | JC4001 | 64 | CEF09B9_2 | acyltransferase |
| R | HIN1520 | yehF | 363 | ECOGTPI_1 | 1172 | YYAF_BACSU | 645 | YLF2_YEAST | GTPase |

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|---|---------|------|-----|-------------|------|-------------|-----|-------------|-----|------------------------------|
| J | HIN1521 | pth | 194 | PTH_ECOLI | 667 | SP5C_BACSU | 194 | YHY9_YEAST | 81 | peptidyl-tRNA hydrolase |
| S | HIN1522 | | 102 | - | | - | | - | | |
| S | HIN1523 | ycfD | 404 | YCFD_ECOLI | 194 | BACGNTZ_21 | 59 | - | | exonuclease VII, large subu |
| L | HIN1524 | xsea | 439 | EX7L_ECOLI | 1253 | - | | - | | NTP pyrophosphohydrolase (M |
| R | HIN1525 | rdsa | 217 | ECU28377_13 | 388 | MUTX_STRPN | 70 | YSA1_YEAST | 85 | phosphoesterase |
| R | HIN1526 | icc | 274 | ICC_ECOLI | 772 | Y168_SYNP6 | 89 | MR11_YEAST | 44 | |
| S | HIN1527 | y1is | 95 | Y1IS_ECOLI | 91 | - | | - | | |
| I | HIN1528 | fadL | 459 | FADL_ECOLI | 370 | - | | - | | outer membrane protein (fat |
| L | HIN1529 | ogt | 190 | ADAB_BACSU | 263 | MGMT_YEAST | 206 | - | | methyalted-DNA--protein-cys |
| L | HIN1530 | mutH | 223 | ECU16361_1 | 704 | T2S3_STAUI | 60 | - | | DNA mismatch repair protein |
| R | HIN1531 | | 430 | YACA_BACSU | 158 | YACA_BACSU | 158 | HSU10860_1 | 51 | ATP-utililizing enzyme |
| G | HIN1532 | | 288 | YFEI_SALTY | 235 | YMDB_BACSU | 61 | YEC9_YEAST | 159 | sugar kinase |
| I | HIN1533 | acca | 315 | A43452 | 1157 | BACPK_1 | 834 | S49909 | 688 | acetyl-CoA carboxylase |
| P | HIN1534 | yebi | 261 | YEBI_ECOLI | 586 | P29K_STRGC | 219 | - | | integral membrane protein |
| R | HIN1535 | | 268 | YEJF_ECOLI | 185 | LLU09553_1 | 166 | - | | transport ATPase |
| R | HIN1536 | yeba | 475 | YEBB_ECOLI | 284 | SYOCPCB_10 | 158 | - | | membrane metalloendopeptida |
| E | HIN1537 | tyrr | 318 | TYRR_ECOLI | 376 | CLOACOR_1 | 282 | - | | transcriptional regulator, i |
| R | HIN1538 | hfg | 91 | S26832 | 351 | - | | - | | host factor-I (?) |
| J | HIN1539 | ycec | 322 | YCEC_ECOLI | 1071 | MGU02214_1 | 196 | SPAC18B11_2 | 125 | pseudou synthetase |
| L | HIN1540 | rne | 951 | RNE_ECOLI | 1079 | SPU23762_2 | 76 | DNAJ_METMA | 58 | ribonuclease E |
| M | HIN1541 | | 70 | OP67_NEIGO | 238 | - | | - | | opacity protein (membrane) |
| H | HIN1542 | | 265 | YMBJ_BACSU | 355 | YMBJ_BACSU | 355 | THI4_SCHPO | 191 | thiamine biosynthesis enzym |
| G | HIN1543 | | 269 | S14885 | 194 | YMDB_BACSU | 183 | S14885 | 194 | sugar kinase |
| R | HIN1544 | | 226 | YWBK_BACSU | 183 | YWBK_BACSU | 183 | THI6_YEAST | 168 | thiamin-phosphate pyrophosp |
| R | HIN1545 | yhbu | 434 | YHJB_ECOLI | 736 | E47031 | 247 | RNCATTRA_1 | 82 | permease |
| S | HIN1546 | | 460 | ECOUW67_88 | 170 | PRTC_PORGI | 118 | - | | protease |
| S | HIN1547 | | 99 | - | | - | | - | | |
| J | HIN1548 | srmb | 439 | SRMB_ECOLI | 1418 | YXIN_BACSU | 269 | S42639 | 477 | RNA helicase |
| L | HIN1549 | yfic | 240 | YFIC_ECOLI | 403 | BACGNTZ_20 | 61 | CELCL18A3_5 | 66 | adenine-specific DNA methyl |
| J | HIN1550 | yflf | 351 | YFIF_ECOLI | 461 | - | | - | | rRNA methylase |
| I | HIN1551 | pssa | 455 | PSS_ECOLI | 626 | BSDNA320D_6 | 72 | SCPEL1GN_1 | 68 | CDP-diacylglycerol--serine |
| I | HIN1552 | fadr | 241 | S01288 | 589 | S33420 | 86 | - | | fatty acid metabolism regul |
| P | HIN1553 | nhab | 522 | NHAB_ECOLI | 1203 | MSG45MP_1 | 94 | - | | NA(+)/H(+) antiporter |
| O | HIN1554 | dsdb | 177 | A48288 | 242 | - | | - | | disulfide bond formation pr |
| E | HIN1555 | glms | 610 | ECOUW82_93 | 1555 | U00020_16 | 343 | U00932_1 | 371 | glutamine amidotransferase |
| L | HIN1556 | hupa | 136 | DBH_VIBPR | 352 | DBH_BACST | 291 | DBH_CRYPH | 169 | DNA-binding protein |
| S | HIN1557 | yjag | 196 | YJAG_ECOLI | 439 | - | | - | | |
| R | HIN1558 | yjad | 264 | YJAD_ECOLI | 270 | MUTX_STRPN | 70 | 8ODP_HUMAN | 68 | pyrophosphohydrolase (MutT |
| O | HIN1559 | yhgi | 198 | ECOUW67_339 | 720 | S49995 | 63 | SCX112_1 | 66 | thioredoxin |
| F | HIN1560 | yhgh | 229 | ECOUW67_338 | 321 | JN0886 | 71 | PUR1_CHICK | 89 | phosphoribosyltransferase; : |
| N | HIN1561 | hopo | 445 | ECOUW67_315 | 464 | - | | - | | general secretion protein |
| S | HIN1562 | | 137 | - | | - | | - | | |
| S | HIN1563 | | 173 | - | | - | | - | | |
| S | HIN1564 | | 168 | - | | - | | - | | |
| S | HIN1565 | | 265 | - | | - | | - | | |
| M | HIN1566 | mrca | 864 | PBPA_ECOLI | 940 | PBPF_BACSU | 450 | - | | penicillin-binding D-alany |
| S | HIN1567 | yhir | 281 | YHIR_ECOLI | 678 | - | | - | | |
| S | HIN1568 | ybab | 121 | YBAB_ECOLI | 497 | YAAK_BACSU | 107 | - | | |

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|---|---------|------|-----|-------------|------|-------------|------|-------------|--|
| L | HIN1569 | recr | 200 | BVECR | 804 | RECR_BACSU | 321 | - | recombinational DNA repair |
| L | HIN1570 | topB | 651 | TOP3_ECOLI | 927 | S45077 | 231 | TOP3_YEAST | topoisomerase III |
| N | HIN1571 | secG | 112 | SECG_ECOLI | 291 | SECG_MYCLE | 67 | - | protein-export translocation |
| G | HIN1572 | fruA | 556 | PTFB_XANCP | 839 | PTFB_BACAM | 399 | - | fructose-permease IIBC component |
| G | HIN1573 | fruK | 313 | K1PF_ECOLI | 710 | LACC_STAUV | 129 | KHK_RAT | 1-phosphofructokinase |
| G | HIN1574 | fruB | 499 | PTFA_ECOLI | 467 | JQ0088 | 208 | - | fructose-permease IIA/FPR component |
| S | HIN1575 | | 178 | - | - | - | - | - | virulence-associated protein |
| R | HIN1576 | | 91 | A49205 | 178 | - | - | - | hemolysin, new ACR |
| S | HIN1577 | ytfl | 63 | - | - | - | - | - | new ACR |
| M | HIN1578 | | 432 | YTFL_ECOLI | 861 | SHTLYCA_2 | 112 | CBS_HUMAN | DNA-directed DNA polymerase |
| S | HIN1579 | | 174 | - | - | - | - | - | pyrimidine kinase |
| S | HIN1580 | ycfH | 260 | YABD_BACSU | 440 | YABD_BACSU | 440 | YBF5_YEAST | peptidyl-prolyl cis-trans isomerase |
| L | HIN1581 | holB | 327 | S35523 | 262 | BSDNAZX_1 | 118 | DMU15967_1 | uracil phosphoribosyltransferase |
| F | HIN1582 | ycfG | 210 | YCFG_ECOLI | 346 | YAAB_BACSU | 202 | KTHY_YEAST | beta-lactamase regulatory protein |
| S | HIN1583 | yceG | 347 | YCEG_ECOLI | 244 | - | - | - | membrane protein |
| O | HIN1584 | surA | 313 | S40574 | 286 | PRSA_BACSU | 88 | YPI3_DICDI | ATP-dependent protease |
| F | HIN1585 | mazG | 179 | PYRR_BACCL | 299 | PYRR_BACCL | 299 | SMHGPR1_1 | ferredoxin-like oxidase |
| R | HIN1586 | | 263 | ECU29580_6 | 384 | YABN_BACSU | 297 | - | ribose 5-phosphate isomerase |
| R | HIN1587 | | 291 | YOF2_PASHA | 152 | - | - | - | phosphoglycerate dehydrogenase |
| O | HIN1588 | lon | 803 | LON_ECOLI | 2278 | LON_BACBR | 1317 | S42365 | |
| C | HIN1589 | yggW | 383 | ECU28377_53 | 1189 | - | - | - | |
| C | HIN1590 | rpiA | 219 | S22097 | 400 | - | - | MUSRPI_1 | |
| C | HIN1591 | serA | 410 | DEECPG | 1279 | LDHDHAG_1 | 226 | YER1_YEAST | |
| S | HIN1592 | ygfZ | 280 | ECU28375_48 | 190 | MLU15182_13 | 80 | - | |
| S | HIN1593 | yicC | 287 | YICC_ECOLI | 963 | - | - | - | |
| E | HIN1594 | higG | 303 | HIS1_ECOLI | 1061 | HIS1_LACIA | 136 | HIS1_SCHPO | ATP phosphoribosyltransferase |
| E | HIN1595 | hisd | 427 | ECLHSDH_1 | 691 | HISX_LACIA | 395 | HIS2_YEAST | histidinol dehydrogenase |
| E | HIN1596 | hisc | 367 | HIS8_ECOLI | 1132 | HIS8_STRCO | 166 | HIS8_SCHPO | histidinol-phosphate aminotransferase |
| E | HIN1597 | hish | 362 | HIS7_ECOLI | 730 | HIS7_STRCO | 276 | HIS7_PHYPR | imidazoleglycerol-phosphate dehydratase |
| E | HIN1598 | hish | 199 | HIS5_SALTY | 294 | HIS5_LACIA | 153 | HIS5_YEAST | glutamine amidotransferase |
| E | HIN1599 | hisa | 245 | HIS4_ECOLI | 810 | HIS4_LACIA | 228 | HIS5_YEAST | phosphoribosylformimino-5-aminoimidazole ribotide synthetase |
| E | HIN1600 | hisF | 258 | HIS6_ECOLI | 1098 | HIS6_LACIA | 326 | HIS5_YEAST | cyclase (histidine biosynthesis) |
| E | HIN1601 | hisi | 221 | ECORFBM_9 | 366 | HIS2_LACIA | 263 | S53349 | phosphoribosyl-AMP cyclohydrolase |
| E | HIN1602 | | 400 | TYRP_ECOLI | 407 | - | - | - | amino acid permease |
| C | HIN1603 | atpC | 142 | ATPE_ECOLI | 397 | S37548 | 157 | - | ATP synthase F1 epsilon subunit |
| C | HIN1604 | atpD | 457 | ATPG_ECOLI | 1970 | ATPX_BACFI | 1233 | - | H+-transporting ATPase beta subunit |
| C | HIN1605 | atpG | 289 | ATPG_ECOLI | 676 | ATPG_BACME | 338 | - | ATP synthase F1 gamma subunit |
| C | HIN1606 | atpA | 513 | ATPA_ECOLI | 2271 | ATPA_BACST | 971 | - | ATP synthase F1 alpha subunit |
| C | HIN1607 | atpH | 177 | ATPD_ECOLI | 513 | ATPD_PROMO | 140 | - | ATP synthase F1 delta subunit |
| C | HIN1608 | atpF | 156 | ECOUNCF_1 | 492 | ATPF_PROMO | 198 | - | ATP synthase F0 subunit b |
| C | HIN1609 | atpE | 84 | ATPL_VIBAL | 270 | ATPL_BACFI | 131 | - | H+-transporting ATP synthase |
| C | HIN1610 | gidB | 262 | ATP6_ECOLI | 332 | ATP6_BACST | 151 | - | ATP synthase F0 subunit a |
| R | HIN1611 | yhfy | 203 | GIDB_ECOLI | 678 | MSGDNAB_19 | 144 | RATDHPBMT_1 | glucose-inhibited division |
| S | HIN1612 | | 125 | ECOW67_306 | 101 | - | - | - | |
| R | HIN1613 | | 200 | YHFE_ECOLI | 117 | U00015_17 | 96 | GSI_HUMAN | hydrolyase (phosphatase ?) |
| R | HIN1614 | | 157 | S39339 | 57 | S39339 | 57 | - | alkaline phosphatase ? |
| S | HIN1615 | ygaG | 167 | ygaG | 415 | - | - | - | |
| R | HIN1616 | | 118 | S47779 | 211 | MHU01217_1 | 168 | - | transposase |

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|---|---------|------|------|-------------|------|-------------|------|-------------|------|------------------------------|
| R | HIN1617 | yjdp | 230 | YJBP_ECOLI | 391 | - | - | - | - | acid phosphatase |
| O | HIN1618 | hsly | 175 | HSLV_ECOLI | 518 | HSLV_BACSU | 307 | MUSLMP2A_1 | 65 | proteasome-related protease |
| O | HIN1619 | hsly | 444 | PASLAPCABT | 1057 | HSLV_BACSU | 570 | YB77_YEAST | 131 | ATP-dependent protease ATPa |
| E | HIN1620 | ycja | 312 | POTD_ECOLI | 839 | STRMALMP_1 | 77 | SC952X_6 | 74 | spermidine/putrescine-bindin |
| C | HIN1621 | ycja | 431 | YCJA_ECOLI | 308 | CSU23955_4 | 87 | CELCl5B12_4 | 77 | NAD/FAD-utilizing oxidoredu |
| R | HIN1622 | yign | 346 | YIGN_ECOLI | 637 | - | - | - | - | coiled coil domain-containi |
| G | HIN1623 | rbpd | 139 | RBSD_ECOLI | 446 | RBSD_BACSU | 195 | - | - | high affinity ribose transp |
| G | HIN1624 | rbpa | 493 | RBSA_ECOLI | 1319 | RBSA_BACSU | 554 | ABC2_MOUSE | 142 | ribose transport ATPase |
| G | HIN1625 | rbcb | 323 | RBSB_ECOLI | 1070 | RBSB_BACSU | 488 | - | - | high affinity ribose permea |
| G | HIN1626 | rbcb | 292 | RBSB_ECOLI | 872 | RBSB_BACSU | 407 | - | - | D-ribose-binding periplasmic |
| G | HIN1627 | rbcb | 306 | RBSK_ECOLI | 843 | RBSK_BACSU | 188 | RBSK_YEAST | 123 | ribose operon repressor |
| G | HIN1628 | rbcb | 332 | ECOUW82_119 | 423 | CLOREPA_1 | 236 | - | - | menagunone biosynthesis pr |
| S | HIN1629 | yqha | 183 | ECU28377_10 | 322 | - | - | - | - | menagunone biosynthesis pr |
| H | HIN1630 | meng | 162 | MENG_ECOLI | 575 | - | - | - | - | telurite resistance protei |
| H | HIN1631 | mena | 308 | MENA_ECOLI | 655 | YWAB_BACSU | 159 | - | - | HincII endonuclease |
| S | HIN1632 | yaeb | 239 | YAEB_ECOLI | 648 | - | - | - | - | HincII methylase |
| P | HIN1633 | teha | 328 | TEHA_ECOLI | 359 | - | - | - | - | DNA-directed RNA polymerase |
| L | HIN1634 | - | 258 | - | - | - | - | - | - | DNA-directed RNA polymerase |
| L | HIN1635 | - | 518 | T257_ECOLI | 144 | BAMBAN111_1 | 92 | YJ12_YEAST | 86 | ribosomal protein L1 |
| L | HIN1636 | rpoc | 1415 | RPOC_ECOLI | 5134 | BACBPSO_1 | 1249 | RPB1_SCHPO | 154 | 50S ribosomal protein L11 |
| L | HIN1637 | rpob | 1343 | RPOB_SALTY | 3143 | RPOB_MYCLE | 1001 | RPOB_PLAFA | 266 | purine-nucleoside phosphory |
| J | HIN1638 | rpia | 229 | R5EC1 | 987 | RL1_STRGR | 573 | RL1_HALMA | 83 | nucleoside permease |
| J | HIN1639 | rpik | 142 | R5SE11 | 638 | S39860 | 311 | YKAE_CAEEL | 193 | ferredoxin-like protein |
| F | HIN1640 | deod | 238 | A27854 | 1021 | MYCPHODOR_1 | 89 | MUSURPH_1 | 62 | integral membrane protein |
| F | HIN1641 | yeim | 417 | YEIM_ECOLI | 432 | NUPC_BACSU | 131 | AS4892 | 358 | ADP-heptose:LPS heptosyltra |
| C | HIN1642 | yjiw | 262 | YJWJ_ECOLI | 126 | ANMOA_1 | 42 | CEF49E2_3 | 72 | fructose-bisphosphate aldol |
| S | HIN1643 | yjji | 514 | YJJI_ECOLI | 251 | - | - | - | - | phosphoglycerate kinase |
| R | HIN1644 | - | 218 | YYAS_BACSU | 104 | YYAS_BACSU | 104 | - | - | ribonuclease I |
| M | HIN1645 | - | 356 | RFAK_ECOLI | 79 | MYGILTX_4 | 74 | - | - | ferredoxin |
| C | HIN1646 | fba | 359 | ADEC2A | 1410 | S09283 | 145 | ADBY2 | 728 | tyrosine-specific permease |
| C | HIN1647 | pgk | 386 | TVECG | 1226 | PGK_BACST | 220 | PGK2_HUMAN | 142 | thymidine kinase |
| L | HIN1648 | rna | 272 | RNI_ECOLI | 88 | - | - | RNS1_ARATH | 60 | sialoglycoprotease |
| C | HIN1649 | - | 86 | FER_CHRVI | 232 | FER2_CHILI | 191 | A45620 | 76 | ribosomal protein S21 |
| E | HIN1650 | tyrp | 406 | GRECY | 741 | REREUTPBC_2 | 64 | GLTE_RABIT | 92 | DNA primase |
| F | HIN1651 | tdk | 193 | KITH_ECOLI | 691 | STRDKDNA_1 | 310 | KITH_CHICK | 55 | RNA polymerase sigma-70 fac |
| G | HIN1652 | yjgd | 342 | GCP_PASHA | 1386 | U00015_29 | 241 | QR17_YEAST | 145 | aspartate ammonia-lyase |
| J | HIN1653 | rpss | 71 | R3EC21 | 297 | RS21_BACST | 147 | - | - | urease-associated protein |
| L | HIN1654 | dnag | 593 | PRIM_ECOLI | 1044 | PRIM_BACSU | 311 | - | - | urease accessory protein |
| E | HIN1655 | rpod | 629 | ECU28379_14 | 1561 | RPSA_CLOAB | 877 | - | - | urease alpha subunit |
| L | HIN1656 | aspa | 475 | ECOUW93_54 | 1937 | ASPA_BACSU | 957 | FUMH_YEAST | 643 | urease beta subunit |
| E | HIN1657 | - | 261 | UREH_HELPY | 126 | BPJ29368_5 | 113 | - | - | urease gamma subunit |
| E | HIN1658 | - | 225 | UREG_HELPY | 736 | UREG_BACSB | 673 | MSS1_YEAST | 60 | urease-associated protein |
| E | HIN1659 | - | 246 | UREF_BACSB | 326 | UREF_BACSB | 326 | - | - | urease accessory protein |
| E | HIN1660 | - | 185 | BPJ29368_2 | 158 | BPJ29368_2 | 158 | - | - | urease alpha subunit |
| E | HIN1661 | - | 572 | S36028 | 1237 | URE1_BACPA | 1204 | UREA_CANEN | 1126 | urease beta subunit |
| E | HIN1662 | - | 101 | URE2_KLEAE | 324 | URE2_BACSB | 313 | UREA_CANEN | 275 | urease gamma subunit |
| E | HIN1663 | - | 100 | URE3_BACSB | 351 | URE3_BACSB | 351 | CH10_HUMAN | 132 | GroES co-chaperonin |
| O | HIN1664 | gros | 96 | ECGROS_1 | 423 | CH10_CHLPN | 173 | - | - | |

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|---|---------|------|-----|-------------|------|-------------|------|-------------|------|-------------------------------|
| O | HIN1665 | grol | 548 | YEPHSPCRP_2 | 2029 | S33213 | 1507 | CH60_ARATH | 1431 | GroEL chaperonin |
| J | HIN1666 | rplI | 149 | RL9_ECOLI | 534 | RL9_SYNY3 | 182 | - | | 50S ribosomal protein L9 |
| J | HIN1667 | rpsR | 75 | ECOUW93_114 | 360 | RS18_BACST | 226 | YEO0_YEAST | 81 | 30S ribosomal protein S18 |
| L | HIN1668 | priB | 108 | Q4ECFR | 287 | - | | - | | 30S ribosomal protein |
| J | HIN1669 | rpsF | 125 | RS6_ECOLI | 502 | MSGDNAB_4 | 129 | - | | 30S ribosomal protein S6. |
| J | HIN1670 | infA | 84 | FIEC1 | 352 | BACALPHA_1 | 272 | - | | translation initiation factor |
| J | HIN1671 | ksgA | 287 | KSGA_ECOLI | 629 | KSGA_BACSU | 227 | DIM1_YEAST | 137 | dimethyladenosine transferase |
| M | HIN1672 | apaH | 302 | NGU14554_6 | 188 | - | | CED2045_4 | 92 | glycosyl transferase |
| F | HIN1673 | apaH | 275 | APAH_ECOLI | 803 | - | | RDGC_DROME | 68 | bis(5'-nucleosyl)-tetraphos |
| S | HIN1674 | gnd | 207 | NGAZURIN | 178 | - | | - | | 6-phosphogluconate dehydrog |
| C | HIN1675 | gnd | 484 | ECOR23_1 | 1170 | S14628 | 465 | DESHGC | 1092 | |
| S | HIN1676 | | 180 | HIU32707_2 | 86 | - | | - | | |
| S | HIN1677 | | 79 | YTRP_LACIA | 85 | YTRP_LACIA | 85 | - | | New BCR |
| C | HIN1678 | | 163 | A47563 | 93 | ASU14553_2 | 78 | YC13_YEAST | 84 | glucose-6-phosphate dehydro |
| C | HIN1679 | zwf | 494 | NOSFTZOOP_3 | 655 | NOSFTZOOP_3 | 655 | S31337 | 427 | glucose -6-phosphate 1-dehy |
| P | HIN1680 | cysQ | 228 | ECOUW93_126 | 170 | U00017_33 | 79 | QUTG_EMENTI | 109 | sulfite synthesis pathway p |
| R | HIN1681 | | 471 | S38663 | 417 | MLU15187_34 | 55 | MECGT4_1 | 68 | permease |
| R | HIN1682 | | 219 | S38663 | 143 | BIOY_BACSH | 52 | - | | membrane protein |
| S | HIN1683 | yrfH | 131 | ECOUW67_324 | 456 | YABO_BACSU | 102 | - | | new BCR |
| E | HIN1684 | asnC | 150 | ASNC_ECOLI | 503 | - | | YGDH_PYRFU | 162 | transcription regulator |
| E | HIN1685 | asna | 330 | ASNA_ECOLI | 1099 | - | | - | | asparagine synthetase |
| R | HIN1686 | yhfE | 224 | YHFE_ECOLI | 328 | YFGS_LACCA | 92 | HIS7_PHYPR | 88 | hydroxylase (phosphatase ?) |
| G | HIN1687 | yhfD | 234 | ECOUW67_310 | 928 | MGU02181_1 | 89 | STPPERIMR_1 | 323 | pentose phosphate epimerase |
| L | HIN1688 | gyrB | 806 | GYRB_ECOLI | 2416 | GYRB_BACSU | 848 | TOP2_CRIFA | 173 | DNA gyrase subunit b. |
| L | HIN1689 | yhgF | 698 | ECOUW67_332 | 2197 | RS1H_BACSU | 189 | JC4026 | 180 | ribosomal protein S1 homolog |
| R | HIN1690 | greB | 158 | ECOUW67_330 | 487 | S48616 | 70 | - | | transcription elongation fac |
| R | HIN1691 | yjJC | 205 | YIJC_ECOLI | 661 | MAU15180_21 | 88 | - | | transcriptional repressor ? |
| M | HIN1692 | oxyR | 301 | A33145 | 1120 | MAU18263_2 | 351 | - | | hydrogen peroxide-inducible |
| C | HIN1693 | | 241 | LKU11244_1 | 152 | YRUB_CLOPA | 74 | LKU11244_1 | 152 | glutaredoxin-like membrane |
| R | HIN1694 | slyX | 73 | SLYX_ECOLI | 173 | - | | - | | coiled coil domain-contains |
| O | HIN1695 | fkpA | 241 | ECOUW67_271 | 361 | MIP_CHLTR | 155 | TCMIP_1 | 231 | peptidyl-prolyl cis-trans is |
| S | HIN1696 | yheO | 221 | ECOUW67_270 | 504 | - | | - | | |
| S | HIN1697 | yheN | 126 | ECOUW67_269 | 233 | - | | - | | |
| S | HIN1698 | | 119 | ECOUW67_268 | 157 | - | | - | | |
| J | HIN1699 | tufB | 394 | EFFECT | 1904 | EFTU_BACFR | 1552 | EF1A_CANAL | 154 | translation elongation factor |
| J | HIN1700 | fusA | 700 | JC1424 | 1365 | EFG_STRRA | 1027 | S35701 | 826 | translation elongation factor |
| J | HIN1701 | rpsG | 156 | JC1423 | 719 | RS7_BACST | 518 | RS5_PODCA | 71 | 30S ribosomal protein S7 |
| J | HIN1702 | rpsL | 124 | R3EC12 | 625 | RS12_SPIPL | 504 | RS23_HUMAN | 52 | 30S ribosomal protein S12 |
| R | HIN1703 | gldA | 629 | GIDA_ECOLI | 2133 | GIDA_BACSU | 843 | NEMMTFSA_1 | 80 | glucose inhibited division |